# PATENT ABSTRACTS OF JAPAN



(11)Publication number:

11-198433

(43) Date of publication of application: 27.07.1999

(51)Int.CI.

B41J 2/44

B41J 2/45

B41J 2/455

G03G 15/01

(21)Application number: 10-003999

(71)Applicant: CANON INC

(22)Date of filing:

12.01.1998

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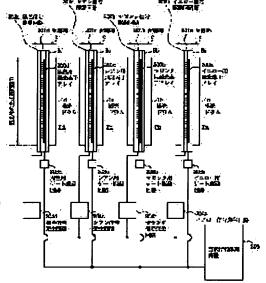
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# (54) IMAGE-FORMING APPARATUS AND LIGHT-EMITTING APPARATUS (57)Abstract:

PROBLEM TO BE SOLVED: To reduce costs at a light-emitting element array part in an image- forming apparatus and eliminate characteristic compensation among element arrays by using a one-chip light-emitting element array and constituting four one-chip light-emitting element arrays arranged for each photosensitive body of a single substrate. SOLUTION: Each of a yellow light-emitting element array 200a, a magenta light-emitting element array 200b, a cyan light-emitting element array 200c and a black light-emitting element array 200d uses a one-chip light-emitting element array arranged to cover the whole

area of a main scan distance in a main scan direction when each photosensitive drum rotates and moves. Each light-emitting element array is integrated into one chip having a plurality of light-emitting elements arranged with a high resolution not lower than, e.g. 600 dpi to cover the whole area of the main scan distance of



the photosensitive body. Preferably, the one-chip light-emitting element array used for the light- emitting element arrays 200a, 220b, 200c, 200d is formed of a single substrate which is cut and separated to four to obtain the arrays.

**LEGAL STATUS** 

[Date of request for examination]

30.09.1998

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] 2942230 [Date of registration] 18.06.1999

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

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JAPANESE	[JP,11-198433,A]
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CLAIMS <u>DETAILED DESCRIPTION</u> <u>TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS</u>

[Translation done.]

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#### **CLAIMS**

#### [Claim(s)]

[Claim 1] a. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor and b. photo conductor, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 2] The aforementioned light emitting device is image formation equipment according to claim 1 which is the element which has an organic light emitting device.

[Claim 3] The aforementioned photo conductor is image formation equipment according to claim 1 which is an electrophotography photo conductor.

[Claim 4] The aforementioned electrophotography photo conductor is image formation equipment according to claim 3 which is an organic electrophotography photo conductor.

[Claim 5] The aforementioned electrophotography photo conductor is image formation equipment according to claim 3 which is an inorganic electrophotography photo conductor.

[Claim 6] The aforementioned inorganic electrophotography photo conductor is image formation equipment according to claim 5 which is an amorphous silicon electrophotography photo conductor.

[Claim 7] It is image formation equipment according to claim 1 whose 2nd terminal of the above the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and is a source terminal.

[Claim 8] The aforementioned SUITCHINGU element array is image formation equipment according to claim 1 by which one chip fabrication is carried out.

[Claim 9] The aforementioned simultaneous luminescence circuit is image formation equipment

according to claim 1 which is the circuit which has the sample hold circuit.

[Claim 10] a. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor and b. photo conductor, [ two or more ] The SUITCHINGU lement array which has two or more SUITCHINGU elements which were made to conn ct for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -impressing -- the 2nd wiring group -- this -- the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 11] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 10 which is the circuit which has the sample hold circuit.

[Claim 12] a. The light-emitting-device array which has two or more trains and the light emitting device which carried out multi-line arrangement to a photo conductor and b. photo conductor, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array which arranged this SUITCHINGU element to the multi-line, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -the 2nd wiring group -- this -- the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously [Claim 13] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 12 which is the circuit which has the sample hold circuit. [Claim 14] a. The light-emitting-device array which has two or more trains and the light emitting

device which carried out multi-line arrangement to a photo conductor and b. photo conductor, Have two or more SUITCHINGU elements with which it was made to connect for every light

emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array which arranged this SUITCHINGU element to the multi-line, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements The 1st wiring group in every [ to which the 1st terminal of a SUITCHINGU element is connected in common ] line, Two or more 2nd wiring groups which wired independently for every SUITCHINGU element for every line of this the line whole [ to which the 2nd terminal of a SUITCHINGU element is connected ]. It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed, the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- Image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously.

[Claim 15] The aforementioned simultaneous luminescence circuit is image formation equipment according to claim 14 which is the circuit which has the sample hold circuit.

[Claim 16] The light-emitting-device array which has the light emitting device arranged to \*\* on the other hand, the SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, [ two or more ] Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 17] The aforementioned light emitting device is luminescence equipment according to claim 16 which is the element which has an organic light emitting device.

[Claim 18] It is luminescence equipment according to claim 16 whose 2nd terminal of the above the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and is a source terminal.

[Claim 19] The aforementioned SUITCHINGU element array is luminescence equipment according to claim 16 by which one chip fabrication is carried out.

[Claim 20] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 16 which is the circuit which has the sample hold circuit.

[Claim 21] The light-emitting-device array which has the light emitting device arranged to \*\* on the other hand, the SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, [ two or more ] Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out, two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the capacitor based on this voltage signal may discharge simultaneously

[Claim 22] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 21 which is the circuit which has the sample hold circuit.

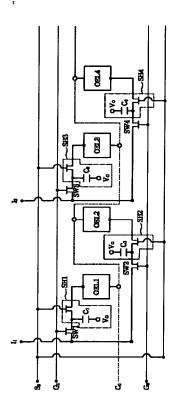
[Claim 23] It has the light-emitting-device array which has two or more trains and light emitting devices which carried out multi-line arrangement, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line. The SUITCHINGU element array which the SUITCHINGU element of one line was made to correspond for every line, and was arranged to the multi-line by this, Classify the SUITCHINGU element for every line into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to the luminescence means of this light-emitting-device array which carries out simultaneous luminescence, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, the voltage signal of another side polarity may be impressed and the

- capacitor based on this voltage signal may discharge simultaneously
- [Claim 24] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 23 which is the circuit which has the sample hold circuit.
  - [Claim 25] Have the light-emitting-device array which has two or more trains and light emitting devices which carried out multi-line arrangement, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line, by this The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [ to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements ] line, Two or more 2nd wiring groups to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that it may be made to synchronize with the 2nd scanning signal, a polar voltage signal may be impressed on the other hand and the capacitor based on this voltage signal may discharge simultaneously

[Claim 26] The aforementioned simultaneous luminescence circuit is luminescence equipment according to claim 25 which is the circuit which has the sample hold circuit.

[Translation done.]

Drawing selection [R pr sentative drawing]



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JAPANESE [JP,11-198433,A]

<u>CLAIMS</u> DETAILED DESCRIPTION <u>TECHNICAL FIELD</u> <u>PRIOR ART</u> <u>EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS</u>

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#### DETAILED DESCRIPTION

# [Detailed Description of the Invention] [0001]

[The technical field to which invention belongs] this invention relates to the image formation equipment which is made to correspond for every photo conductor, forms cyanogen, a Magenta, y llow, and a black picture, and forms a color picture by compounding these pictures by arranging two or more photo conductors to a single tier, and using each photo conductor independently especially, about the luminescence equipment used for the image formation equipment and this like an electrophotography copying machine.

[0002]

[Description of the Prior Art] The laser beam light source is prepared as an image exposure means for every four electrophotography photo conductors made the single tier arrange, respectively. The oscillation of the four laser beam light sources each is made to control based on cyanogen, a Magenta, yellow, and each black image information. by this The laser beam light source image formation equipment which forms a color picture is known by making cyanogen, a Magenta, yellow, and an electrostatic black latent image form for every four electrophotography photo conductors, and making these electrostatic latent images develop, and making the development picture of these plurality compound.

[0003] Moreover, it changes into the laser beam light source used with the aforementioned image formation equipment, and the Light Emitting Diode light source image formation equipment which has arranged the four Light Emitting Diode light sources for every photo conductor as the light source in which cyanogen, a Magenta, yellow, and an electrostatic black latent image are made to form is also known.

[0004] It is difficult for the present condition it to make in agreement correctly both the main scanning direction of each laser beam and the direction of vertical scanning every four laser beam light sources arranged for every four photo conductors, since the aforementioned laser beam light source image formation equipment makes in agreement cyanogen, a Magenta, yellow, and each black picture and makes them compound.

[0005] On the other hand, with the aforementioned Light Emitting Diode light source image formation equipment, although it could be made to realize comparatively simply, since the demand which makes in agreement both above—mentioned main scanning direction and directions of vertical scanning needed to use two or more Light Emitting Diode chips as the connector type Light Emitting Diode element which it comes to tie to a single tier in addition to Light Emitting Diode being expensive, it became still more expensive. Furthermore, since, as for a Light Emitting Diode chip, the luminescence property was different for every chip, it was made to expose by the same connector type Light Emitting Diode element as the above, and the exposure condition was different for every luminescence property of a chip in main scanning direction, consequently the horizontal–scanning exposure whole region to movement of a photo conductor worsened picture repeatability of main scanning direction.

[0006] Moreover, in the electrophotography copying machine which can form a color picture, th luminescence property between two or more of said connector type Light Emitting Diode elements arranged for two or more photo conductors of every even in this case although it needed to tiliand the mold Light Emitting Diode element needs to be arranged for two or more photo conductors of every was different, and the difficult demand which has been arranged for every photo conductor and which ties and adjusts the luminescence property between mold Light Emitting Diode elements had newly occurred.

[0007]

[Problem(s) to be Solved by the Invention] The image formation equipment with which Object of the Invention used the connector type Light Emitting Diode element for the aligner, The variation of the luminescence property in main scanning direction which had become a problem especially in the electrophotography copying machine is canceled. The number of drive wiring and the number of drive circuit chips of a printer head are reduced sharply, luminescence brightness is raised to sufficient size with this, and it is in the point which brings forward the process speed of an electrophotography copying machine sharply by this.

[0008] Furthermore, Object of the Invention increases the luminescence time of a light emitting device sharply, and is in longer \*\*\*\* sharply about the life of a printer head.

[Means for Solving the Problem] The light-emitting-device array which has the light emitting device which has arranged two or more this inventions the 1st to the main scanning direction to the move direction of a. photo conductor and b. photo conductor, The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- The driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, To the image formation equipment which \*\*\*\*, it has the 1st feature, to the 2nd a photo conductor, b. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate

sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 2nd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 3rd, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 3rd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 4th, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements The 1st wiring group in every [ to which the 1st terminal of a SUITCHINGU element is connected in common ] line, Two or more 2nd wiring groups which wired independently for every SUITCHINGU element for every line of this the line whole [ to which the 2nd terminal of a SUITCHINGU element is connected ], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -the above -- even if few -- the one 2nd wiring group -- this -- The 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of the 1st driving

means which operate the aforementioned simultaneous luminescence circuit, and d. multi-line so that the capacitor based on this information signal may discharge simultaneously, and they are other 2nd wiring groups of two or more 2nd wiring groups. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. alike -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 4th feature and has the light emitting device arranged on the other hand to the 5th at \*\*, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 5th feature and has the light emitting device arranged on the other hand to the 6th at \*\*, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 6th feature and has two or more trains and the light

emitting device which carried out multi-line arrangement in the 7th, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line by this are classified into two or more groups. The 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements, The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element of this, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, and the 1st wiring group of c. above -- the 1st scanning signal -- impressing -- the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously Have the light-emitting-device array which has the 7th feature and has in the octavus two or more trains and the light emitting device which carried out multi-line arrangement, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. by this The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [ to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements ] line, Two or more 2nd wiring groups to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed, the above -- the 1st wiring group of an other bank -the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage

- signal may discharge simultaneously, it has the feature of the octavus.
- [0010] In the 1st example of a mode with a desirable this invention, the aforementioned light emitting device is an element which has an organic light emitting device.
- [0011] In the 2nd example of a mode with a desirable this invention, the aforementioned photo conductor is organic or an inorganic electrophotography photo conductor.
  - [0012] In the 4th example of a mode with a desirable this invention, the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and the 2nd terminal of the above is a source terminal.
  - [0013] In the 5th example of a mode with a desirable this invention, one chip fabrication of the aforementioned SUITCHINGU element array is carried out.
    [0014]

[Embodiments of the Invention] The example of this invention is explained according to a drawing. <u>Drawing 1</u> is the cross section of the image formation equipment which used the luminescence equipment of this invention as an aligner, especially a color electrophotography copying machine.

[0015] Printed material, such as a form, is contained by the cassette 6 and makes printed material feed to a mechanical component towards the conveyance section in the color copying machine shown in this drawing with operation of image formation (henceforth a print) from a cassette 6. The conveyance belt 31 can carry out the both-way run of between a roller 35 and rollers 36 and 37 by carrying out the suspension of the conveyance belt 31 between the drive roller 35 and two follower rollers 36 and 37, forming the conveyance section in it, and carrying out the rotation drive of the drive roller 35 by the motor 38 here. In addition, the direction which runs is a direction shown in the arrow A in drawing in the belt 31 bottom.

[0016] The image formation units Pa, Pb, Pc, and Pd of four units are formed along the direction where the conveyance belt 31 extends. These image formation units Pa, Pb, Pc, and Pd have the respectively same composition, and explain the composition roughly hereafter taking the case of the image formation unit Pa of the 1st amorous glance.

[0017] In the image formation unit Pa, the cylinder-like photo conductor which approaches the conveyance belt 31 and rotates in the direction of arrow B, i.e., photoconductor drum 1a, is arranged. The photosensitive layer of the front face is uniformly charged with rotation of photoconductor drum 1a by primary electrification machine 4a constituted from zone-of-contact electrical machinery. Then, the light figure of the yellow component of a manuscript picture is exposed by luminescence from exposure means 8a using the aforementioned one chip light-emitting-device array which exposes the horizontal-scanning whole region of a photoconductor drum, and a yellow component static latent image is formed in this electrification photosensitive layer of it. The portion in which this latent image was formed moves by the rotation one by one, reaches the position of yellow development counter 2a, is developed by the yellow toner supplied from yellow development counter 2a in the position, and is visualized.

[0018] A yellow toner image results in an imprint part with corona-electrical-charging machine 3a prepared through the conveyance belt 31 with this drum 1a by rotation of photoconductor drum 1a. Timing is doubled with this and printed material is conveyed by the imprint part with the conveyance belt 31. Next, by impressing imprint bias to corona-electrical-charging machine 3a, the yellow toner image on photoconductor drum 1a is imprinted on printed material with rotation of photoconductor drum 1a, and goes.

[0019] Then, with rotation of photoconductor drum 1a, the toner which remains on it is removed by cleaning equipment (not shown), and will be in the state where it can go into the following image formation process. On the other hand, the printed material by which the yellow toner image was imprinted is conveyed with the conveyance belt 31 by the print section by the image formation unit Pb of the 2nd amorous glance.

[0020] The image formation unit Pb of the 2nd amorous glance is the same composition as the

image formation unit Pa of the 1st amorous glance mentioned above, and like the above by luminescence from exposure means 8b using the one chip light-emitting-device array The light figure of the Magenta component of a manuscript picture is exposed, a Magenta component static latent image is formed, development by the Magenta toner is performed, and in the imprint section, on printed material, the obtained Magenta toner image lays on top of the yellow toner image of the 1st amorous glance, and is imprinted. Similarly, with conveyance of printed material, you form a cyanogen component static latent image and a black component static latent image, respectively, a cyano toner image and a black toner image make it imprint in piles in each process by luminescence by the exposure meanses 8c and 8d using each one chip light-emitting-device array in the image formation units Pc and Pd, and the color picture which piled up the toner image of four colors on printed material is formed.

[0021] In the image formation units Pb, Pc, and Pd of the 2nd amorous glance of the above, the 3rd amorous glance, and the 4th amorous glance Photoconductor drums 1b, 1c, and 1d, Magenta development counter 2b, cyano development counter 2c and 2d of black development counters, the corona-electrical-charging machines 3b, 3c, and 3d, and the primary electrification machines 4b, 4c, and 4d constituted from zone-of-contact electrical machinery are used like the image formation unit Pa of the 1st amorous glance, respectively.

[0022] After ending the stroke of the image formation units Pa, Pb, Pc, and Pd, after the printed material by which the toner image of four colors was imprinted is conveyed further and discharged with the separation electric discharge vessel 7, it dissociates from the conveyance belt 31 and it is sent to fixing equipment 5 equipped with the fixing roller 51 and the pressurization roller 52 of a couple. Here, usually, pressurization and heating are performed by the nip section of the rollers 51 and 52 currently heated by predetermined temperature, and fixing of an imprint toner image is performed. Then, printed material is discharged by outside the plane [ of a copying machine ].

[0023] <u>Drawing 2</u> is a block diagram illustrating the detail of the image formation units Pa, Pb, Pc, and Pd illustrated to <u>drawing 1</u>.

[0024] The exposure meanses 8a, 8b, 8c, and 8d which the image formation units Pa, Pb, Pc, and Pd were made to correspond to photoconductor drums 1a, 1b, 1c, and 1d, respectively, and have been arranged are loaded with light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. Such light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black It lets the wiring sections 201a, 201b, 201c, and 201d which consist of a high-density outgoing line, respectively pass. Yellow signal drive circuit (IC) connect with 202a, Magenta signal drive (circuit IC) 202b, cyano signal drive (circuit IC) 202c, and black signal drive (circuit IC) 202d, and by operation by these drive circuits Each light emitting device is controlled by either luminescence or un-emitting light. According to the picture signal from yellow signal generating circuit 204a, Magenta signal generating circuit 204b, cyano signal generating circuit 204c, and 204d of black signal generating circuits, it is set up so that luminescence operation of a light-emitting-device array can be controlled. The light emitting device used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black forms the array (array object) which the single tier was made to arrange by the high resolution of for example, 1200dpi.

[0025] Moreover, in light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black, the following switching element circuit and the sample hold circuit are formed, and the timing of each drive operation of the gate line in these circuits is controlled by gate drive circuit 203for yellow a, gate drive circuit 203for Magentas b, gate drive circuit 203for cyanogen c, and 203d of gate drive circuits for black. And control of the picture signal of control

of this gate drive operation and yellow, a Magenta, cyanogen, and a black signal is performed by the image-information-processing equipment 205 in CPU (not shown).

[0026] The one chip light-emitting-device array which has cover d and arranged the whole r gion of the horizontal-scanning distance D in the main scanning direction to the rotation of photoconductor drums 1a, 1b, 1c, and 1d is used light-emitting-device array 200for yellow a used by this invention, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. These light-emitting-device arrays 200a, 200b, 200c, and 200d are accumulated on the one chip in which two or more light emitting devices arranged 600 dpi by the above 1200dpi resolution which is high resolution, or the high resolution beyond it cover the whole region of the horizontal-scanning distance D of a photo conductor.

[0027] By the desirable example of this invention, the above-mentioned one chip light-emitting-device array used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black is created from the single substrate which lower-\*\*, and uses for four what carried out cutting separation and was obtained, respectively. [0028] The arrow C in drawing shows the direction of vertical scanning of the photo conductor which rotates. moreover, photoconductor drums 1a, 1b, 1c, and 1d The aluminium pipe of the same diameter (for example, the diameter of 60cm, 30cm, 20cm) was used, the photosensitive layer (for example, an organic photoelectrical body whorl with four [ same ] or the same a-Si photosensitive layer) of the same kind was used, therefore the traverse speed of the direction C of vertical scanning was set up identically respectively.

[0029] <u>Drawing 3</u> is the perspective diagram of the one chip light-emitting-device array substrate 300 in the process before carrying out cutting separation along with the cutting part lose contact 302 four, respectively from the glass substrate 303 used as the single substrate which formed the one chip light-emitting-device array 301 used by the above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black prepared on the glass substrate 303.

[0030] If it is the size which can form a light-emitting-device array by the one chip, there will be especially no limit in the size of the glass substrate 303 used by this invention.

[0031] Drawing 4 illustrates the equal circuit for every one chip light-emitting-device array 301 illustrated to drawing 3 . light emitting devices OEL1, OEL2, OEL3, and OEL4 -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged and it connects with a single tier in an active-matrix circuit this active-matrix circuit -- switching elements SW1, SW2, SW3, and SW4 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL1 and OEL3 and ... the light-emitting-device group (the 1st group) classified as OEL (2N−1) It connects with each gate terminal of SW (2N−1) in common through the gate line G1. the odd-numbered switching elements SW1 and SW3 and ... the even-numbered light emitting devices OEL2 and OEL4 and ... the light-emitting-device group (the 2nd group) classified as LEL (2Ns) -- the even-numbered switching elements SW2 and SW4 and ... it connects with each gate terminal of SW (2Ns) in common through the gate line G2 the above "N" -- 1, 2, 3, 4, and 5 -- it is the integer of ... and light-emitting-device OEL1-OEL2 which adjoins each other in this active-matrix circuit, OEL3-OEL4, and ... switching element SW1-SW2 which adjoins each other in every OEL(2N-1)-OEL (2Ns), SW3-SW4, and ... the source terminal of every SW(2N-1)-SW (2Ns) -- each source lines I1 and I2 -- it connects in common through ... Moreover, light emitting devices OEL1, OEL2, OEL3, and OEL4 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL1, OEL2, OEL3, and OEL4... It can consider as an anode or a cathode.

[0032] the desirable example of this invention -- switching elements SW1, SW2, SW3, and SW4

... and light emitting devices OEL1, OEL2, OEL3, and OEL4 — sample hold circuits SH1, SH2, SH3, and SH4 and ... are connected between ... These sample hold circuits SH1, SH2, SH3, and SH4 and ... respectively — the capacitors C1, C2, C3, and C4 for charge storages ... having — \*\*\*\* — the capacitors C1, C2, C3, and C4 for these charge storages ... Connect with the switching element for sample hold which connected the gate to the common path cord S0, respectively, and it is made to synchronize with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. Under the present circumstances, capacitors C1, C2, C3, and C4 for charge storages ... A counter electrode is set as a ground or predetermined DC bias VG. Moreover, according to an outside temperature, a time (lifetime), etc., it can carry out adjustable [ of the amount of bias of this predetermined DC bias VG ].

[0033] Drawing 5 is illustrating the drive of the active-matrix circuit illustrated to drawing 4. In the first half of 1 horizontal-scanning period corresponding to one scanning interval by the laser to a photoconductor drum, it is made to synchronize with the gate-on pulse to the gate lines G1 and G2, and the pulse of the peak value which answered the picture signal which is a polar voltage signal (polarity is based on the applied voltage to a path cord C0) on the other hand is impressed to the source lines I1 and I2. This one side polarity voltage signal is made to respond to the gradation information on image information, and each peak value is set up. Moreover, in another desirable example, it can be made to be able to respond to the gradation information on image information, and pulse width or a pulse number can be changed. a path cord S0 -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out as image information at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- in order to carry out order electric discharge to ... and to make light emit, the gate-on pulse for setting the gate of the switching element for sample hold as ON is impressed the impression stage of this gate-on pulse -- the capacitors C1, C2, C3, and C4 for charge storages -- it is set up so that it may be made to operate, after a charge is fully charged by ...

[0034] As for the pulse of a polar voltage signal, on the other hand in the second half of 1 continuing horizontal-scanning period, it is desirable for the voltage signal of reversed polarity to be impressed and to set a voltage average with a voltage signal as zero in the first half a voltage signal and the second half in this case, and to set [ which was synchronized with the gate-on pulse to the gate lines G1 and G2, and was used for source line I1I2 in the period of the first half ] up so that DC component may be lessened as much as possible, the operation same to a path cord S0 as the time of the first half — the capacitors C1, C2, C3, and C4 for charge storages — the charge by which accumulation maintenance was carried out at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 — it reverse-discharges to ... The state where light is not emitted is formed by this reverse electric discharge.

[0035] <u>Drawing 6</u> illustrates one of the desirable examples of the light-emitting-device array of this invention. this light-emitting-device array — the [ the 1st light-emitting-device array block, the 2nd light-emitting-device array block, and ] — it is classified into three blocks which consist of 3 light-emitting-device array blocks, and the circuit which illustrates every block to <u>drawing 4</u> is incorporated under the present circumstances, in the example of <u>drawing 6</u>, it is set as the wiring for a time-sharing drive with three time sharing — having — every block — the [ the 1st gate line block (G11, G12, G13), the 2nd gate line block (G21, G22, G23), and ] — 3 gate line block (G31, G32, G33) is wired The source line corresponding to an information signal line may be wired in common for every light-emitting-device array block, and can decrease the number of wiring by this. Moreover, for every light-emitting-device array block, an information line can also be wired independently and the time of 1 horizontal-scanning period can be sharply shortened by this.

[0036] the [ the 1st light-emitting-device array block the 2nd light-emitting-device array block, and ] — in the first half, 3 light-emitting-device array block has a scan in the first half a scan

and the second half, respectively, and it produces order electric discharge by scan, and in the second half, it impresses a gate-on pulse to path cords S1, S2, and S3 so that reverse electric discharge may be produced by scan Moreover, in the first half, reverse electric discharge may be produced by scan and order electric discharge may be produced by scan in the second half. [0037] <a href="Drawing 7">Drawing 7</a> is illustrating the xample of a drive of the light-emitting-device array of drawing 6. The charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to a path cord S1. By this, luminescence from a light emitting device can be operated simultaneously the whole block. Then, the charge to the capacitor for charge storages is started by the impression start of the gate-on pulse to the 1st gate line block (G11, G12, G13), and the reverse electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate-on pulse to path cords S1, S2, and S3.

[0038] Reach the 2nd gate line block (G21, G22, G23), it is made to operate one by one like the above also about the 3rd gate line block (G31, G32, G33), and 1 horizontal scanning is performed.

[0039] Drawing 8 shows the cross section about 1 bit of the element structure used in the circuit illustrated to drawing 4. Among drawing, 801 are a substrate and insulators, such as glass and plastics, are used. On the substrate, the switching element section SW1, the sample hold circuit section SH1, and the light-emitting-device section OEL1 are formed. The switching element section SW1 has the 1st transistor structured division constituted by the gate electrode 802, the gate insulator layer 803, the thin-film-semiconductor layer 804, the source electrode 805, and the drain electrode 806. The sample hold circuit section SH1 has the 2nd transistor structured division constituted by the capacitor section for charge storages constituted by the insulator layer 809 prepared in inter-electrode [ of the electrode 807-808 of a couple, and this couple ] and the gate electrode 810, the gate insulator layer 811, the thin-film-semiconductor layer 812, the source electrode 813, and the drain electrode 814. The light-emitting-device section OEL1 is the light-emitting-device section constituted by the luminous layer 817 prepared in inter-electrode [ of the electrode 815-816 of a couple, and this couple ].

[0040] the [ the 1st used by this invention, and ] — as thin-film-semiconductor layers 804 and 812 of 2 transistor sections, a thin film amorphous silicon, thin film polycrystal silicon, or single-crystal—thin-film silicon can be used, and a thin film silicon nitride and thin film tantalum oxide can be used as gate insulator layers 803 and 811 Moreover, as for the electrode of a couple used in the light-emitting-device section OEL1, it is desirable to use one of these as an anode, to use another side as a cathode, and to use reflection nature metal membranes, such as aluminum, silver, zinc, gold, and chromium, as an electrode of another side, using transparent electric conduction films, such as ITO (an indium and stannic-acid ghost) and a tin oxide, as an electrode corresponding to the luminescence direction of radiation.

[0041] Moreover, in order to prevent degradation of a luminous layer in this invention, a wrap's is desirable by the sealing agent in this luminous layer. As this sealing agent, organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0042] Next, although the luminous layer 817 suitably used by this invention is organic electroluminescence (OEL), inorganic [ EL ] can also be used for it by this invention. [0043] The example of OEL which can be used by this invention is indicated below. [0044] As a material in OEL used by this invention EPA349,265 of Scozzafava; (1990) U.S. patent No. 4,356,429; [ of Tang ] U.S. patent No. 4,539,507; [, such as VanSlyke, ] U.S. patent the 4,720,432;, such as VanSlyke U.S. patent No. 4,769,292; [, such as Tang, ] U.S. patent No. 4,885,211; [, such as Tang, ] U.S. patent the 4,950,950;, such as Perry U.S. patent No. 5,059,861;

[, such as Littman, ] U.S. patent No. 5,047,687; [ of VanSlyke ] U.S. patent No. 5,073,446; [, such as Scozzafava, ] U.S. patent No. 5,059,862; [, such as VanSlyke, ] The thing of an indication can be used [ U.S. patent / of VanSlyke etc. / No. 5,061,617 /; U.S. patent / of VanSlyke / No. 5,151,629 /; U.S. patent / of Tang etc. / No. 5,294,869 /; U.S. patent / of Tang etc. / No. 5,294,870 ]. EL layer consists of organic hole pouring in contact with an anode plate and a move band, and the electron injection and move band that form organic hole pouring, and a move band and junction. Hole pouring and a move band may be formed from a single material or two or more single material, and consist of a hole pouring layer in contact with the continuous hole moving bed infixed between an anode plate and a hole pouring layer, an electron injection, and a move band. Similarly, an electron injection and a move band may be formed from single material or two or more material, and consist of an electron-injection layer in contact with the continuous electronic-transition layer infixed between an anode plate and an electron-injection layer, hole pouring, and a move band. A hole, electronic reunion, and luminescence are generated within the electron injection which adjoins junction of an electron injection, a move band and hole pouring, and a move band, and a move band. Although it deposits by vacuum evaporationo typically, it deposits with other conventional technology again, and deals in the compound which forms an OEL layer.

[0045] The organic material which consists of a hole pouring layer in the desirable example is: [0046] which has the following general formulas.

[External Character 1]

A metal, a metallic oxide, or the metal halogenides T1 and T2 fill both the unsaturation six membered rings in which N or C-RM expresses hydrogen, or :Q contains a displacer like an alkyl or a halogen here. While a desirable alkyl portion contains the carbon atom of about 1 to 6, it constitutes an allyl-compound portion with a desirable phenyl.

[0047] In the desirable example, the hole moving bed is an aromatic tertiary amine. The desirable subclass of an aromatic tertiary amine is: [0048] containing the tetrapod allyl-compound diamine which has the following formulas.

$$R_7$$
 $N$ 
 $N$ 
 $N$ 
 $N$ 
 $R_6$ 
 $R_6$ 

Are is a propine group here, n is the integer of 1 to 4, and it is Ar, R7, R8, and R9. It is the allyl-compound group chosen, respectively. In the desirable example, luminescence, an electron injection, and a move band contain a metal oxy-NOIDO (oxinoid) compound. The desirable example of a metal oxy-NOIDO compound is : [0049] which has the following general formulas. [External Character 3]

$$\begin{bmatrix} R_6 & R_7 \\ R_5 & Q \\ R_4 & N \\ R_8 & R_2 \end{bmatrix}_2$$

$$\begin{bmatrix} R_7 & R_6 \\ Q & R_5 \\ N & R_4 \\ R_2 & R_3 \end{bmatrix}_2$$

It is R2-R7 here. Replacement possibility is expressed. At other desirable examples, a metal oxy-NOIDO compound is : [0050] which has the following formulas. [External Character 4]

$$\begin{bmatrix}
R_6 & R_7 \\
R_5 & O \\
R_4 & N
\end{bmatrix}$$

$$\begin{bmatrix}
L_1 & L_2 \\
L_6 & L_4
\end{bmatrix}$$

$$\begin{bmatrix}
L_1 & L_2 \\
L_6 & L_4
\end{bmatrix}$$

here — R2-R7 a definition is given above — having — L1-L5 — intensive — 12 or a fewer carbon atom — containing — respectively — separate — the hydrogen or the carbohydrate group of a carbon atom of 1 to 12 — expressing — L1 and L2 — both — or both L2 and L3 can form the united benzo ring In other desirable examples, metal oxy-NOIDO compounds are the following formulas.

#### [0051]

[External Character 5]

It is R2-R6 here. Hydrogen or other replacement possibility are expressed. It is only that the above-mentioned example expresses the existing desirable organic material which is only used within an electroluminescence layer. It does not mean that they restrict the visual field of this invention, and, generally this directs an organic electroluminescence layer. Organic EL material contains the coordination compound which has an organic ligand so that the above-mentioned example may show.

[0052] As a segment electrode 403 used by the light emitting device of this invention, reflection nature metals, such as aluminum, silver, zinc, gold, and chromium, can be used, and transparent electric conduction films, such as indium teens OKISAIZU and a tin oxide, can be used as a counterelectrode 402.

[0053] As a sealing agent 405 used by this invention, it is closed with organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy. Moreover, as a protective layer 404 used by this invention, the coat material by organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0054] With the image formation equipment of this invention, inorganic photo conductive materials, such as organic photo conductive materials, such as BENZO oxazole system photo

conductor matter, BENZO thiazole system photo conductor matter, and triphenylamine system photo conductor matter, or amorphous silicon (a-Si) photo conductor matter, amorphous silicon germanium alloy (a-SiGe) photo conductor matter, and amorphous silicon carbon alloy (a-SiC) photo conductor matter, can be used as a photo conductors [ 1a, 1b, 1c and 1d ] photosensitive lay r.

[0055] Thus, on the created element, 150nm of silicon nitrides was formed in the spatter, and the protective layer was formed for closure. In addition, protective—layer formation performed membrane formation within the same vacuum system from organic layer membrane formation. [0056] What has a big work function as an anode material organic [ Light Emitting Diode ] is desirable, and can use a tin oxide, gold, platinum, palladium, a selenium, iridium, copper iodide, etc. other than ITO used by this example.

[0057] On the other hand, what has a work function small as a cathode material is desirable, and can use Mg, aluminum, Li, In(s), or these alloys other than Mg/Ag used by this example.

[0058] About an electron hole transporting bed, the hole transportability compound expressed to the following table other than TPD can be used.

[0059] Moreover, you may use not only an organic material but inorganic material. a-Si, a-SiC, etc. are raised as inorganic material used.

[0060] As an electronic transporting bed, it is Alq3. The electronic transportability compound otherwise expressed to the following table can be used.

[0061] Moreover, dopant coloring matter as shown in the following table 10 can also be doped to an electronic transporting bed or an electron hole transporting bed.

[0062] As for a material organic [ Light Emitting Diode ], it is desirable to choose what considers spectrum luminescence with sensitivity as the photoconductor drum to be used. [0063]

[External Character 6]

ホール輸送体

$$-(CH - CH_2)_{\overline{\Pi}} \qquad -(CH - CH_2)_{\overline{\Pi}} \qquad -(CH - CH_2)_{\overline{\Pi}}$$

$$C = O$$

$$O$$

$$O$$

$$O$$

$$O$$

$$O$$

$$O$$

$$CH_3$$
 $N$ 
 $O$ 
 $N$ 
 $O$ 
 $CH_3$ 
 $CH_3$ 

[0064]

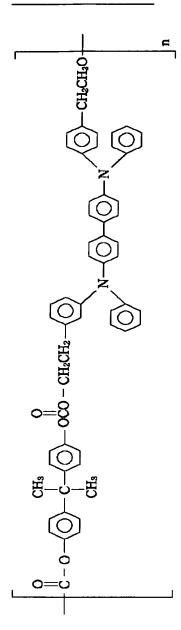
[External Character 7]

$$\begin{array}{c|c} CH_{s} & & & \\ \hline \\ CH_{s} & & \\ \hline \\ CH_{s} & & \\ \hline \\ \end{array} \begin{array}{c|c} H & & \\ \hline \\ CH_{s} & \\ \hline \\ \end{array} \begin{array}{c|c} CH_{s} & \\ \hline \\ CH_{s} & \\ \hline \\ \end{array}$$

$$CH_3$$
  $\longrightarrow$   $N$   $\longrightarrow$   $CH = CH$   $\longrightarrow$   $C1$ 

[0065]

[External Character 8]



[0066] [External Character 9]

$$C_2H_5$$
 $C_2H_5$ 
 $C_2H_6$ 
 $C_2H_6$ 
 $C_2H_6$ 
 $C_2H_6$ 

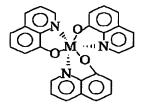
$$CH = N - N$$

$$C_{2H_5}$$

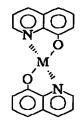
$$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$$
 CH =  $N - N$ 

[0067] [External Character 10]

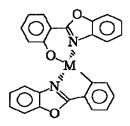
# [0068] [External Character 11]



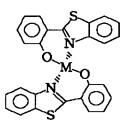
M: Al, Ga



M: Zn, Mg, Be



M: Zn, Mg, Be



M: Zn, Mg, Be

# [0069]

[External Character 12]

$$CH_{3}-\overset{CH_{3}}{\underset{CH_{3}}{\longleftarrow}}\overset{N}{\underset{U}{\longleftarrow}}\overset{N}{\underset{U}{\longleftarrow}}$$

$$CH_{3}-\overset{CH_{3}}{\overset{|}{C}}-\overset{N}{\overset{|}{C}}-\overset{N}{\overset{|}{C}}-CH_{3}$$

[0070]

[External Character 13]

$$\left( \begin{array}{c} \\ \\ \\ \\ \\ \\ \\ \end{array} \right)_{2}^{0}$$

[0071]

[External Character 14]

$$\bigcirc C = CH - CH = C$$

$$\bigcirc \bigcirc - \bigcirc - \bigcirc + \bigcirc + \bigcirc + \bigcirc - \bigcirc - \bigcirc \bigcirc$$

$$\bigcirc C = CH - \bigcirc CH = C$$

## [0072]

[External Character 15]

#### ドーパント色素

[0073] <u>Drawing 9</u> is the light emitting device of another desirable mode of this invention. The luminous layer 817 which the same thing as the switching element section SW1 and the sample hold circuit section SH1 which were used by <u>drawing 8</u> was prepared on the downward substrate 801, and was prepared in inter-electrode [ of the electrodes 816 and 815b of the couple for forming a 1-bit light-emitting part on the upper substrate 901 (insulating substrates, such as glass) and this couple ] is arranged. The substrates 801 and 901 of these couples carry out opposite arrangement towards the inside, and electrode 815a on a substrate 801 and electrode 815b on a substrate 901 are electrically connected by the electroconductive glue (adhesive electrical connection object) 902.

[0074] The adhesive electrical connection object 902 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry this by adoption of screen printing, offset printing, or the dispenser applying method using the electroconductive glue by which distributed content of a conductive particle like a carbon particle, and a silver-granule child and a copper particle was carried out into an epoxy system or phenol system heat-curing adhesives.

[0075] In order to reinforce interface adhesive strength, silane coupling agents, such as N-(2-aminoethyl)-3-aminopropyl m thyl dimethoxysilane, N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, 3-aminopropyl methyldiethoxysilane, and 3-glycidoxypropyltrimetoxysilane, can be made to contain in an above-mentioned electroconductive glue.

[0076] A pewter etc. is mentioned as other examples of the adhesive electrical connection object 902.

[0077] The adhesive electric insulation object 903 is formed in the periphery section of the above-mentioned adhesive electrical connection object 902. The adhesive electric insulation object 903 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry an epoxy system or phenol system insulation adhesives by methods, such as offset printing, screen printing, or the dispenser applying method. Under the present circumstances, it is suitable to use the manufacture method of preparing an electroconductive glue to the substrate of the direction in which insulating adhesives are formed to one substrate of the upper substrate 901 or a substrate 801, and these insulating adhesives are not formed, in the application of insulating adhesives and an electroconductive glue.

[0078] Moreover, in this invention, it can replace with the above-mentioned adhesive electric

insulation object 903, and liquid insulators, such as liquid crystal like an insulator without adhesive strength, for example, an organic solvent, a high-boiling point organic solvent, a nematic liquid crystal, cholesteric liquid crystal, and a smectic liquid crystal, can also be used. [0079] Moreover, the above-mentioned adhesive electric insulation object 903 or a non-adhesive property electric insulation object can also be made to contain coloring objects, such as a color pigment and a paint, so that it may have shading hardening. [0080] Drawing 10 is another desirable example of this invention. The luminescence equipment illustrated to drawing 10 is equipped with the parallel one chip light-emitting-device array 100 of two lines which prepared the parallel one chip light-emitting-device array located in head line 100A and consecutiveness line 100B to the move direction of photo conductors, such as a photoconductor drum. It is good that it is made to perform the writing of one line by operation of this parallel one chip light-emitting-device array 100 of two lines. [0081] Drawing 11 is the equal circuit of the parallel one chip light-emitting-device array 100 of two lines illustrated to drawing 10. The thing of the same equal circuit as the element illustrated to above-mentioned drawing 3, respectively can be used for the one chip light-emitting-device array of head line 100A and consecutiveness line 100B. [0082] the light emitting devices OEL11, OEL12, OEL13, and OEL14 of head line 100A and head line 100A with which the one chip light-emitting-device array of consecutiveness line 100B is equipped -- the light emitting devices OEL21, OEL22, OEL23, and OEL24 of ... and consecutiveness line 100B -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged, respectively and it connects with 2 parallel in an active-matrix circuit this active-matrix circuit -- switching elements SW11, SW12, SW13, and SW14 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL11 and OEL13 and ... the light-emitting-device group (the 1st group) classified as OEL1 (2N-1) It connects with each gate terminal of SW1 (2N-1) in common through the gate line G(100A) 1. the odd-numbered switching elements SW11 and SW13 and ... the even-numbered light emitting devices OEL12 and OEL14 and ... the light-emitting-device group (the 2nd group) classified as OEL1 (2Ns) -- the even-numbered switching elements SW12 and SW14 and ... it connects with each gate terminal of SW1 (2Ns) in common through the gate line G(100A) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL11-OEL12, OEL13-OEL14, and ... switching element SW11-SW12 which adjoins each other in every OEL1(2N-1)-OEL1 (2Ns), SW13-SW14, and ... for the source terminal of every SW1(2N-1)-SW1 (2Ns) each source lines I (100A)1 and I (100A)2

-- it connects in common through ... Moreover, light emitting devices OEL11, OEL12, OEL13, and OEL14 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL11, OEL12, OEL13, and OEL14... It can consider as an anode or a cathode. furthermore, the switching elements SW11, SW12, SW13, and SW14 ... light emitting devices OEL11, OEL12, OEL13, and OEL14 -- the same sample hold circuit as the element of drawing 3 is connected between ... This sample hold circuit is equipped with the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train connects the gate to the common path cord S(100A) 1, and the gate is connected to the common path cord S(100A) 2, and the capacitor for charge storages of an even number train is synchronized with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. [0083] the light emitting devices OEL21, OEL22, OEL23, and OEL24 of head line 100A and consecutiveness line 100B of parallel arrangement -- similarly in the active-matrix circuit linked to ... the odd-numbered light emitting devices OEL21 and OEL23 and ... the light-emitting-device group (the 1st group) classified as OEL2 (2N-1) It connects with each gate terminal of SW2 (2N-1) in common through the gate line G(100B) 1. the odd-numbered switching elements SW21 and SW23 and ... the even-numbered light emitting devices OEL22 and OEL24 and ... the light-emitting-device group (the 2nd group) classified as OEL2 (2Ns) -- the even-numbered switching elements SW22 and SW24 and ... it connects with each gate terminal of SW2 (2Ns) in common through the gate line G(100B) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL21-OEL22, OEL23-OEL24, and ... switching element SW21-SW22 which adjoins each other in every OEL2(2N-1)-OEL2 (2Ns), SW23-SW24, and ... for the source terminal of every SW2(2N−1)−SW2 (2Ns) each source lines I (100B)1 and I (100B)2 -- it connects in common through ... Moreover, light emitting devices OEL21, OEL22, OEL23, and OEL24 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL21, OEL22, OEL23, and OEL24... It can consider as an anode or a cathode. furthermore -- the same -- switching elements SW21, SW22, SW23, and SW24 ... and light emitting devices OEL21, OEL22, OEL23, and OEL24 -- to ... It \*\*\*\*\* a sample hold circuit and has the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train The gate is connected to the common path cord S(100B) 1, respectively, and, as for the capacitor for charge storages of an even number train, the gate is connected to the common path cord S(100B) 2, respectively.

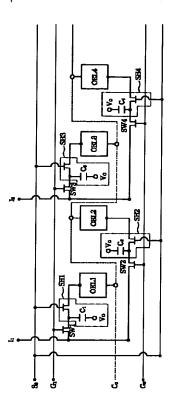
[0084] As for the light emitting device arranged to head line 100A with the luminescence equipment described above, and the contiguity light emitting device arranged to consecutiveness line 100B, it is desirable to arrange in parallel to parallel of vertical scanning, i.e., the direction of a photoconductor drum, to the move direction of a photo conductor. [0085] Drawing 12 is a drive sequence diagram in drive operation of the element illustrated to drawing 10 and 11. the source line I (100A) which becomes the relation of a contiguity light emitting device during the drive of the light-emitting-device array of head line 100A in the drive sequence illustrated to drawing 12 — the 1, 2, ..., source line I (100B) — as for the applied voltage impressed to 1, 2, and ..., it is good to set up so that it may consider as reversed polarity on the basis of C0 and the voltage average may become zero especially mutually [0086]

[Effect of the Invention] According to this invention, on having canceled the "technical problem which should solve invention" of a protomerite, and a concrete target By having changed into the conventional connector type Light Emitting Diode, and having used the new one chip light-emitting-device array by this invention The cost in the light-emitting-device array section of image formation equipment can be reduced, and the color repeatability in main scanning direction can be raised. Furthermore, since four single chip light-emitting-device arrays arranged for every photo conductor are taken from a single substrate and the luminescence property of each single chip light-emitting-device array is almost equal Since the property

compensation between each element array was omissible, the cost in at this rate was reduced sharply.

[0087] Furthermore, according to this invention, the luminescence brightness of a light emitting device was reinforced sharply, the process speed of an electrophotography copying machine was sharply raised by this, simultaneously, the number of driver ICs and the number of wiring in a printer head could be reduced sharply, and this has realized the color electrophotography copying machine of a low cost.

# Drawing selection [Representative drawing]



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VENTION TECH	NICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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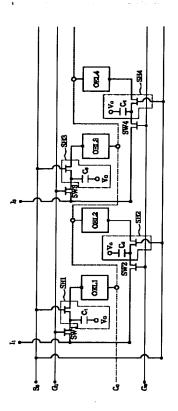
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#### **TECHNICAL FIELD**

[The technical field to which invention belongs] this invention relates to the image formation equipment which is made to correspond for every photo conductor, forms cyanogen, a Magenta, yellow, and a black picture, and forms a color picture by compounding these pictures by arranging two or more photo conductors to a single tier, and using each photo conductor independently especially, about the luminescence equipment used for the image formation equipment and this like an electrophotography copying machine.





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JAPANESE [JP,11-198433,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

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#### **PRIOR ART**

[Description of the Prior Art] Prepare the laser beam light source, respectively, the oscillation of the four laser beam light sources each is made to control as an image exposure means based on cyanogen, a Magenta, yellow, and each black image information for every four electrophotography photo conductors made the single tier arrange, and it is this. The laser beam light source image formation equipment which forms a color picture is known by making cyanogen, a Magenta, yellow, and an electrostatic black latent image form for every four electrophotography photo conductors, and making these electrostatic latent images develop, and making the development picture of these plurality compound.

[0003] Moreover, it changes into the laser beam light source used with the aforementioned image formation equipment, and the Light Emitting Diode light source image formation equipment which has arranged the four Light Emitting Diode light sources for every photo conductor as the light source in which cyanogen, a Magenta, yellow, and an electrostatic black latent image are made to form is also known.

[0004] It is difficult for the present condition it to make in agreement correctly both the main scanning direction of each laser beam and the direction of vertical scanning every four laser beam light sources arranged for every four photo conductors, since the aforementioned laser beam light source image formation equipment makes in agreement cyanogen, a Magenta, yellow, and each black picture and makes them compound.

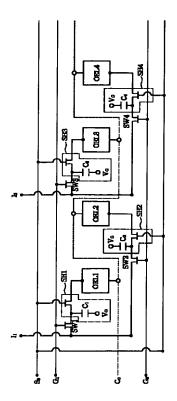
[0005] On the other hand, with the aforementioned Light Emitting Diode light source image formation equipment, although it could be made to realize comparatively simply, since the demand which makes in agreement both above—mentioned main scanning direction and directions of vertical scanning needed to use two or more Light Emitting Diode chips as the connector type Light Emitting Diode element which it comes to tie to a single tier in addition to Light Emitting Diode being expensive, it became still more expensive. Furthermore, since, as for a Light Emitting Diode chip, the luminescence property was different for every chip, it was made to expose by the same connector type Light Emitting Diode element as the above, and the exposure condition was different for every luminescence property of a chip in main scanning direction, consequently the horizontal—scanning exposure whole region to movement of a photo conductor worsened picture repeatability of main scanning direction.

[0006] Moreover, in the electrophotography copying machine which can form a color picture, the luminescence property between two or more of said connector type Light Emitting Diode elements arranged for two or more photo conductors of every even in this case although it needed to tie and the mold Light Emitting Diode element needs to be arranged for two or more photo conductors of every was different, and the difficult demand which has been arranged for every photo conductor and which ties and adjusts the luminescence property between mold Light Emitting Diode elements had newly occurred.

[0007]

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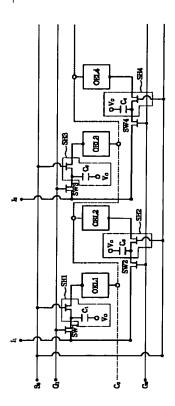
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### **EFFECT OF THE INVENTION**

[Effect of the Invention] According to this invention, it is the foregoing paragraph.

Drawing sel ction [Representative drawing]



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JAPANESE [JP,11-198433,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

#### \* NOTICES \*

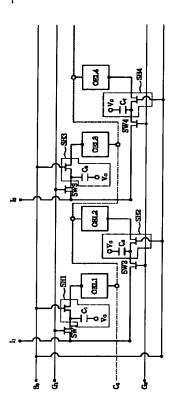
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#### TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] The image formation equipment with which Object of the Invention used the connector type Light Emitting Diode element for the aligner, The variation of the luminescence property in main scanning direction which had become a problem especially in the electrophotography copying machine is canceled. The number of drive wiring and the number of drive circuit chips of a printer head are reduced sharply, luminescence brightness is raised to sufficient size with this, and it is in the point which brings forward the process speed of an electrophotography copying machine sharply by this.

[0008] Furthermore, Object of the Invention increases the luminescence time of a light emitting device sharply, and is in longer \*\*\*\* sharply about the life of a printer head.





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#### **MEANS**

[Means for Solving the Problem] The light-emitting-device array which has the light emitting device which has arranged two or more this inventions the 1st to the main scanning direction to the move direction of a. photo conductor and b. photo conductor, The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- The driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, To the image formation equipment which \*\*\*\*, it has the 1st feature, to the 2nd a, photo conductor, b. The light-emitting-device array which has the light emitting device arranged to the main scanning direction to the move direction of a photo conductor, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the exposure means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned

1st wiring group -- the 2nd scanning signal -- impr ssing -- the 2nd wiring group -- this -- To the image formation equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 2nd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 3rd, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to an exposure means to perform exposure to the aforementioned photo conductor, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the image formation equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 3rd feature and has two or more trains and the light emitting device which carried out multi-line arrangement to a. photo conductor and b. photo conductor in the 4th, The SUITCHINGU element array which has two or more SUITCHINGU elements with which it was made to connect for every light emitting device in every line, was made to correspond for every line of this, and was arranged to the multi-line, Classify the SUITCHINGU element array for every line of this into two or more groups, and for every group of two or more this classified SUITCHINGU elements The 1st wiring group in every [ to which the 1st terminal of a SUITCHINGU element is connected in common ] line, Two or more 2nd wiring groups which wired independently for every SUITCHINGU element for every line of this the line whole [ to which the 2nd terminal of a SUITCHINGU element is connected ], It has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and by simultaneous luminescence from this light-emitting-device array The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of the exposure means and c. multi-line which perform exposure to the aforementioned photo conductor. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. other 2nd wiring groups of two or more 2nd wiring groups -- this -- it is made to synchronize with the 1st scanning signal, the voltage signal of another side polarity is impressed, and the capacitor based on this voltage signal discharges simultaneously -- as -- the aforementioned simultaneous

luminescence circuit Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed. it operates -- making -- the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -- impressing -- the 2nd wiring group besides the above -- this -- To the image formation equipment which has the 2nd driving means which operate the afor mentioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has th 4th feature and has the light emitting device arranged on the other hand to the 5th at \*\*, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element It has the 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously. The 1st scanning signal is impressed to a luminescence means to perform simultaneous luminescence from this light-emitting-device array, and the 1st wiring group of c. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed, the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 5th feature and has the light emitting device arranged on the other hand to the 6th at \*\*, [ two or more ] The SUITCHINGU element array which has two or more SUITCHINGU elements which were made to connect for every light emitting device of this, and have been arranged, Classify this SUITCHINGU element array into two or more groups, and for every group of two or more this classified SUITCHINGU elements For every 1st wiring group to which the 1st terminal of a SUITCHINGU element is connected in common, and this SUITCHINGU element The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected, and the luminescence means equipped with two or more light-emitting-device array blocks which have the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, c. Simultaneous luminescence of the 1 light-emitting-device array block is carried out. two or more light-emitting-device array blocks Every block The 1st scanning signal is impressed to the 1st driving means made to operate sequentially and the 1st wiring group of d. above. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed, the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously The light-emitting-device array which has the 6th feature and has two or more trains and the light emitting device which carried out multi-line arrangement in the 7th, Have two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line by this are classified into two or more groups. The 1st wiring group to which

the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements, The 2nd wiring group to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element of this, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. and the 1st wiring group of c. above -- the 1st scanning signal -- impressing -- the 2nd wiring group -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the aforementioned 1st wiring group -- the 2nd scanning signal -- impressing -- the 2nd wiring group -- this -- To the luminescence equipment which has the driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously Have the light-emitting-device array which has the 7th feature and has two or more trains and the light emitting device which carried out multi-line arrangement in the 8th, and two or more SUITCHINGU elements with which it was made to connect for every light emitting device of a multi-line, and the SUITCHINGU element of one line is made to correspond for every line. by this The SUITCHINGU element array and the SUITCHINGU element for every line which were arranged to the multi-line are classified into two or more groups. The 1st wiring group for every [ to which the 1st terminal of a SUITCHINGU element is connected in common for every group of two or more classified this SUITCHINGU elements ] line, Two or more 2nd wiring groups to which the 2nd terminal of a SUITCHINGU element is connected for every SUITCHINGU element for every line of this and which wired independently for every line, And the luminescence means which has the simultaneous luminescence circuit which makes this light-emitting-device array emit light simultaneously, and carries out simultaneous luminescence from this light-emitting-device array, c. The 1st scanning signal is impressed to the 1st wiring group of at least one line of the 1st wiring groups of a multi-line. Make it synchronize with the 1st scanning signal, and, on the other hand, a polar voltage signal is impressed. at least one 2nd wiring group in two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and the voltage signal of another side polarity is impressed. the above -- even if few -- the 1st wiring group of one line -- the 2nd scanning signal -- impressing -- the above -- even if few -- the one 2nd wiring group -- this -- The 1st driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this information signal may discharge simultaneously, And the 1st scanning signal is impressed to the 1st wiring group of the other bank of the 1st wiring groups of d. multi-line. Make it synchronize with the 1st scanning signal, and the voltage signal of another side polarity is impressed. other 2nd wiring groups of two or more 2nd wiring groups -- this -- The aforementioned simultaneous luminescence circuit is operated so that the capacitor based on this voltage signal may discharge simultaneously. Make it synchronize with the 2nd scanning signal, and, on the other hand, a polar voltage signal is impressed, the above -- the 1st wiring group of an other bank -- the 2nd scanning signal -impressing -- the 2nd wiring group besides the above -- this -- To the luminescence equipment which has the 2nd driving means which operate the aforementioned simultaneous luminescence circuit so that the capacitor based on this voltage signal may discharge simultaneously, it has the 8th feature.

[0010] In the 1st example of a mode with a desirable this invention, the aforementioned light emitting device is an element which has an organic light emitting device.

[0011] In the 2nd example of a mode with a desirable this invention, the aforementioned photo conductor is organic or an inorganic electrophotography photo conductor.

- [0012] In the 4th example of a mode with a desirable this invention, the aforementioned SUITCHINGU element is TFT, and the 1st terminal of the above is a gate terminal, and the 2nd terminal of the above is a source terminal.
- [0013] In the 5th example of a mode with a desirable this invention, one chip fabrication of the aforementioned SUITCHINGU element array is carried out.
  [0014]

[Embodiments of the Invention] The example of this invention is explained according to a drawing. <u>Drawing 1</u> is the cross section of the image formation equipment which used the luminescence equipment of this invention as an aligner, especially a color electrophotography copying machine.

[0015] Printed material, such as a form, is contained by the cassette 6 and makes printed mat rial feed to a mechanical component towards the conveyance section in the color copying machine shown in this drawing with operation of image formation (henceforth a print) from a cassette 6. The conveyance belt 31 can carry out the both-way run of between a roller 35 and rollers 36 and 37 by carrying out the suspension of the conveyance belt 31 between the drive roller 35 and two follower rollers 36 and 37, forming the conveyance section in it, and carrying out the rotation drive of the drive roller 35 by the motor 38 here. In addition, the direction which runs is a direction shown in the arrow A in drawing in the belt 31 bottom.

[0016] The image formation units Pa, Pb, Pc, and Pd of four units are formed along the direction where the conveyance belt 31 extends. These image formation units Pa, Pb, Pc, and Pd have the respectively same composition, and explain the composition roughly hereafter taking the case of the image formation unit Pa of the 1st amorous glance.

[0017] In the image formation unit Pa, the cylinder-like photo conductor which approaches the conveyance belt 31 and rotates in the direction of arrow B, i.e., photoconductor drum 1a, is arranged. The photosensitive layer of the front face is uniformly charged with rotation of photoconductor drum 1a by primary electrification machine 4a constituted from zone-of-contact electrical machinery. Then, the light figure of the yellow component of a manuscript picture is exposed by luminescence from exposure means 8a using the aforementioned one chip light-emitting-device array which exposes the horizontal-scanning whole region of a photoconductor drum, and a yellow component static latent image is formed in this electrification photosensitive layer of it. The portion in which this latent image was formed moves by the rotation one by one, reaches the position of yellow development counter 2a, is developed by the yellow toner supplied from yellow development counter 2a in the position, and is visualized.

[0018] A yellow toner image results in an imprint part with corona-electrical-charging machine 3a prepared through the conveyance belt 31 with this drum 1a by rotation of photoconductor drum 1a. Timing is doubled with this and printed material is conveyed by the imprint part with the conveyance belt 31. Next, by impressing imprint bias to corona-electrical-charging machine 3a, the yellow toner image on photoconductor drum 1a is imprinted on printed material with rotation of photoconductor drum 1a, and goes.

[0019] Then, with rotation of photoconductor drum 1a, the toner which remains on it is removed by cleaning equipment (not shown), and will be in the state where it can go into the following image formation process. On the other hand, the printed material by which the yellow toner image was imprinted is conveyed with the conveyance belt 31 by the print section by the image formation unit Pb of the 2nd amorous glance.

[0020] The image formation unit Pb of the 2nd amorous glance is the same composition as the image formation unit Pa of the 1st amorous glance mentioned above, and like the above by luminescence from exposure means 8b using the one chip light-emitting-device array The light figure of the Magenta component of a manuscript picture is exposed, a Magenta component static latent image is formed, development by the Magenta toner is performed, and in the imprint section, on printed material, the obtained Magenta toner image lays on top of the yellow toner

image of the 1st amorous glance, and is imprinted. Similarly, with conveyance of printed material, you form a cyanogen component static latent image and a black component static latent image, respectively, a cyano toner image and a black toner image make it imprint in piles in each process by luminescence by the exposure meanses 8c and 8d using each one chip light-emitting-device array in the image formation units Pc and Pd, and the color picture which piled up the toner image of four colors on printed material is formed.

[0021] In the image formation units Pb, Pc, and Pd of the 2nd amorous glance of the above, the 3rd amorous glance, and the 4th amorous glance Photoconductor drums 1b, 1c, and 1d, Magenta development counter 2b, cyano development counter 2c and 2d of black development counters, the corona-electrical-charging machines 3b, 3c, and 3d, and the primary electrification machines 4b, 4c, and 4d constituted from zone-of-contact electrical machinery are used like the image formation unit Pa of the 1st amorous glance, respectively.

[0022] After ending the stroke of the image formation units Pa, Pb, Pc, and Pd, after the printed material by which the toner image of four colors was imprinted is conveyed further and discharged with the separation electric discharge vessel 7, it dissociates from the conveyance belt 31 and it is sent to fixing equipment 5 equipped with the fixing roller 51 and the pressurization roller 52 of a couple. Here, usually, pressurization and heating are performed by the nip section of the rollers 51 and 52 currently heated by predetermined temperature, and fixing of an imprint toner image is performed. Then, printed material is discharged by outside the plane [ of a copying machine ].

[0023] <u>Drawing 2</u> is a block diagram illustrating the detail of the image formation units Pa, Pb, Pc, and Pd illustrated to <u>drawing 1</u>.

[0024] The exposure meanses 8a, 8b, 8c, and 8d which the image formation units Pa, Pb, Pc, and Pd were made to correspond to photoconductor drums 1a, 1b, 1c, and 1d, respectively, and have been arranged are loaded with light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. Such light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black It lets the wiring sections 201a, 201b, 201c, and 201d which consist of a high-density outgoing line, respectively pass. Yellow signal drive circuit (IC) connect with 202a, Magenta signal drive (circuit IC) 202b, cyano signal drive (circuit IC) 202c, and black signal drive (circuit IC) 202d, and by operation by these drive circuits Each light emitting device is controlled by either luminescence or un-emitting light. According to the picture signal from yellow signal generating circuit 204a, Magenta signal generating circuit 204b, cyano signal generating circuit 204c, and 204d of black signal generating circuits, it is set up so that luminescence operation of a light-emitting-device array can be controlled. The light emitting device used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black forms the array (array object) which the single tier was made to arrange by the high resolution of for example, 1200dpi.

[0025] Moreover, in light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black, the following switching element circuit and the sample hold circuit are formed, and the timing of each drive operation of the gate line in these circuits is controlled by gate drive circuit 203for yellow a, gate drive circuit 203for Magentas b, gate drive circuit 203for cyanogen c, and 203d of gate drive circuits for black. And control of the picture signal of control of this gate drive operation and yellow, a Magenta, cyanogen, and a black signal is performed by the image-information-processing equipment 205 in CPU (not shown).

[0026] The one chip light-emitting-device array which has covered and arranged the whole region of the horizontal-scanning distance D in the main scanning direction to the rotation of photoconductor drums 1a, 1b, 1c, and 1d is used light-emitting-device array 200for yellow a

used by this invention, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black. These light-emitting-device arrays 200a, 200b, 200c, and 200d are accumulated on the one chip in which two or more light emitting devices arranged 600 dpi by the above 1200dpi resolution which is high resolution, or the high resolution beyond it cover the whole region of the horizontal-scanning distance D of a photo conductor.

[0027] By the desirable example of this invention, the above-mentioned one chip light-emitting-device array used by above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black is created from the single substrate which lower-\*\*, and uses for four what carried out cutting separation and was obtained, respectively. [0028] The arrow C in drawing shows the direction of vertical scanning of the photo conductor which rotates. moreover, photoconductor drums 1a, 1b, 1c, and 1d The aluminium pipe of the same diameter (for example, the diameter of 60cm, 30cm, 20cm) was used, the photosensitive layer (for example, an organic photoelectrical body whorl with four [ same ] or the same a–Si photosensitive layer) of the same kind was used, therefore the traverse speed of the direction C of vertical scanning was set up identically respectively.

[0029] <u>Drawing 3</u> is the perspective diagram of the one chip light-emitting-device array substrate 300 in the process before carrying out cutting separation along with the cutting part lose contact 302 four, respectively from the glass substrate 303 used as the single substrate which formed the one chip light-emitting-device array 301 used by the above-mentioned light-emitting-device array 200for yellow a, light-emitting-device array 200for Magentas b, light-emitting-device array 200for cyanogen c, and light-emitting-device array 200d for black prepared on the glass substrate 303.

[0030] If it is the size which can form a light-emitting-device array by the one chip, there will be especially no limit in the size of the glass substrate 303 used by this invention.

[0031] Drawing 4 illustrates the equal circuit for every one chip light-emitting-device array 301 illustrated to drawing 3. light emitting devices OEL1, OEL2, OEL3, and OEL4 -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged and it connects with a single tier in an active-matrix circuit this active-matrix circuit -- switching elements SW1, SW2, SW3, and SW4 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL1 and OEL3 and ... the light-emitting-device group (the 1st group) classified as OEL (2N-1) It connects with each gate terminal of SW (2N-1) in common through the gate line G1. the odd-numbered switching elements SW1 and SW3 and ... the even-numbered light emitting devices OEL2 and OEL4 and ... the light-emitting-device group (the 2nd group) classified as LEL (2Ns) -- the even-numbered switching elements SW2 and SW4 and ... it connects with each gate terminal of SW (2Ns) in common through the gate line G2 the above "N" -- 1, 2, 3, 4, and 5 -- it is the integer of ... and light-emitting-device OEL1-OEL2 which adjoins each other in this active-matrix circuit, OEL3-OEL4, and ... switching element SW1-SW2 which adjoins each other in every OEL(2N-1)-OEL (2Ns), SW3-SW4, and ... the source terminal of every SW(2N-1)-SW (2Ns) -- each source lines I1 and I2 -- it connects in common through ... Moreover, light emitting devices OEL1, OEL2, OEL3, and OEL4 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL1, OEL2, OEL3, and OEL4... It can consider as an anode or a cathode.

[0032] the desirable example of this invention — switching elements SW1, SW2, SW3, and SW4 ... and light emitting devices OEL1, OEL2, OEL3, and OEL4 — sample hold circuits SH1, SH2, SH3, and SH4 and ... are connected between ... These sample hold circuits SH1, SH2, SH3, and SH4 and ... respectively — the capacitors C1, C2, C3, and C4 for charge storages ... having — \*\*\*\* — the capacitors C1, C2, C3, and C4 for these charge storages ... Connect with the switching element for sample hold which connected the gate to the common path cord S0,

respectively, and it is made to synchronize with the rotation of a photoconductor drum, and it is set up so that the gat of the switching element for sample hold may turn on or turn off in predetermined interval time. Under the present circumstances, capacitors C1, C2, C3, and C4 for charge storages ... A counter electrode is set as a ground or predetermined DC bias VG. Moreover, according to an outside temperature, a time (lifetime), etc., it can carry out adjustable [ of the amount of bias of this predetermined DC bias VG ].

[0033] Drawing 5 is illustrating the drive of the active-matrix circuit illustrated to drawing 4. In the first half of 1 horizontal-scanning period corresponding to one scanning interval by the laser to a photoconductor drum, it is made to synchronize with the gate-on pulse to the gate lines G1 and G2, and the pulse of the peak value which answered the picture signal which is a polar voltage signal (polarity is based on the applied voltage to a path cord C0) on the other hand is impressed to the source lines I1 and I2. This one side polarity voltage signal is made to respond to the gradation information on image information, and each peak value is set up. Moreover, in another desirable example, it can be made to be able to respond to the gradation information on image information, and pulse width or a pulse number can be changed. a path cord S0 -- the capacitors C1, C2, C3, and C4 for charge storages -- the charge by which accumulation maintenance was carried out as image information at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 -- in order to carry out order electric discharge to ... and to make light emit, the gate-on pulse for setting the gate of the switching element for sample hold as ON is impressed the impression time of this gate-on pulse -- the capacitors C1, C2, C3, and C4 for charge storages -- it is set up so that it may be made to operate, after a charge is fully charged by ...

[0034] As for the pulse of a polar voltage signal, on the other hand in the second half of 1 continuing horizontal-scanning period, it is desirable for the voltage signal of reversed polarity to be impressed and to set a voltage average with a voltage signal as zero in the first half a voltage signal and the second half in this case, and to set [ which was synchronized with the gate-on pulse to the gate lines G1 and G2, and was used for source line I1I2 in the period of the first half ] up so that DC component may be lessened as much as possible, the operation same to a path cord S0 as the time of the first half — the capacitors C1, C2, C3, and C4 for charge storages — the charge by which accumulation maintenance was carried out at ... light emitting devices OEL1, OEL2, OEL3, and OEL4 — it reverse-discharges to ... The state where light is not emitted is formed by this reverse electric discharge.

[0035] <u>Drawing 6</u> illustrates one of the desirable examples of the light-emitting-device array of this invention. this light-emitting-device array — the [ the 1st light-emitting-device array block, the 2nd light-emitting-device array block, and ] — it is classified into three blocks which consist of 3 light-emitting-device array blocks, and the circuit which illustrates every block to <u>drawing 4</u> is incorporated under the present circumstances, in the example of <u>drawing 6</u>, it is set as the wiring for a time-sharing drive with three time sharing — having — every block — the [ the 1st gate line block (G11, G12, G13), the 2nd gate line block (G21, G22, G23), and ] — 3 gate line block (G31, G32, G33) is wired The source line corresponding to an information signal line may be wired in common for every light-emitting-device array block, and can decrease the number of wiring by this. Moreover, for every light-emitting-device array block, an information line can also be wired independently and the time of 1 horizontal-scanning period can be sharply shortened by this.

[0036] the [ the 1st light-emitting-device array block the 2nd light-emitting-device array block, and ] — in the first half, 3 light-emitting-device array block has a scan in the first half a scan and the second half, respectively, and it produces order electric discharge by scan, and in the second half, it impresses a gate-on pulse to path cords S1, S2, and S3 so that reverse electric discharge may be produced by scan Moreover, in the first half, reverse electric discharge may be produced by scan and order electric discharge may be produced by scan in the second half. [0037] <u>Drawing 7</u> is illustrating the example of a drive of the light-emitting-device array of

drawing 6. The charge to the capacitor for charge storages is started by the impression start of the gate—on pulse to the 1st gate line block (G11, G12, G13), and the electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate—on pulse to a path cord S1. By this, luminescence from a light emitting device can be operated simultaneously the whole block. Then, the charge to the capacitor for charge storages is started by the impression start of the gate—on pulse to the 1st gate line block (G11, G12, G13), and the reverse electric discharge to each light emitting device from each capacitor for charge storages is started by the impression start of the gate—on pulse to path cords S1, S2, and S3.

[0038] Reach the 2nd gate line block (G21, G22, G23), it is made to operate one by one like the above also about the 3rd gate line block (G31, G32, G33), and 1 horizontal scanning is performed.

[0039] Drawing 8 shows the cross section about 1 bit of the element structure used in the circuit illustrated to drawing 4. Among drawing, 801 are a substrate and insulators, such as glass and plastics, are used. On the substrate, the switching element section SW1, the sample hold circuit section SH1, and the light-emitting-device section OEL1 are formed. The switching element section SW1 has the 1st transistor structured division constituted by the gate electrode 802, the gate insulator layer 803, the thin-film-semiconductor layer 804, the source electrode 805, and the drain electrode 806. The sample hold circuit section SH1 has the 2nd transistor structured division constituted by the capacitor section for charge storages constituted by the insulator layer 809 prepared in inter-electrode [ of the electrode 807-808 of a couple, and this couple ] and the gate electrode 810, the gate insulator layer 811, the thin-film-semiconductor layer 812, the source electrode 813, and the drain electrode 814. The light-emitting-device section CEL1 is the light-emitting-device section constituted by the luminous layer 817 prepared in inter-electrode [ of the electrode 815-816 of a couple, and this couple ].

[0040] the [ the 1st used by this invention, and ] — as thin-film-semiconductor layers 804 and 812 of 2 transistor sections, a thin film amorphous silicon, thin film polycrystal silicon, or single-crystal-thin-film silicon can be used, and a thin film silicon nitride and thin film tantalum oxide can be used as gate insulator layers 803 and 811 Moreover, as for the electrode of a couple used in the light-emitting-device section OEL1, it is desirable to use one of these as an anode, to use another side as a cathode, and to use reflection nature metal membranes, such as aluminum, silver, zinc, gold, and chromium, as an electrode of another side, using transparent electric conduction films, such as ITO (an indium and stannic-acid ghost) and a tin oxide, as an electrode corresponding to the luminescence direction of radiation.

[0041] Moreover, in order to prevent degradation of a luminous layer in this invention, a wrap's is desirable by the sealing agent in this luminous layer. As this sealing agent, organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0042] Next, although the luminous layer 817 suitably used by this invention is organic electroluminescence (OEL), inorganic [EL] can also be used for it by this invention. [0043] The example of OEL which can be used by this invention is indicated below. [0044] As a material in OEL used by this invention EPA349,265 of Scozzafava; (1990) U.S. patent No. 4,356,429; [ of Tang ] U.S. patent No. 4,539,507; [, such as VanSlyke, ] U.S. patent the 4,720,432;, such as VanSlyke U.S. patent No. 4,769,292; [, such as Tang, ] U.S. patent No. 4,885,211; [, such as Tang, ] U.S. patent the 4,950,950;, such as Perry U.S. patent No. 5,059,861; [, such as Littman, ] U.S. patent No. 5,047,687; [ of VanSlyke ] U.S. patent No. 5,073,446; [, such as Scozzafava, ] U.S. patent No. 5,059,862; [, such as VanSlyke, ] The thing of an indication can be used [ U.S. patent / of VanSlyke etc. / No. 5,061,617 /; U.S. patent / of VanSlyke / No. 5,151,629 /; U.S. patent / of Tang etc. / No. 5,294,869 /; U.S. patent / of Tang etc. / No. 5,294,870 ]. EL layer consists of organic hole pouring in contact with an anode plate and a move

band, and the electron injection and move band that form organic hole pouring, and a move band and junction. Hole pouring and a move band may be formed from a single material or two or more single material, and consist of a hole pouring layer in contact with the continuous hole moving bed infixed between an anode plate and a hole pouring layer, an electron injection, and a move band. Similarly, an electron injection and a move band may be formed from single material or two or more material, and consist of an electron-injection layer in contact with the continuous electronic—transition layer infixed between an anode plate and an electron-injection layer, hole pouring, and a move band. A hole, electronic reunion, and luminescence are generated within the electron injection which adjoins junction of an electron injection, a move band and hole pouring, and a move band, and a move band. Although it deposits by vacuum evaporationo typically, it deposits with other conventional technology again, and deals in the compound which forms an OEL layer.

[0045] The organic material which consists of a hole pouring layer in the desirable example is : [0046] which has the following general formulas.

[External Character 1]

$$T_1$$
 $T_1$ 
 $T_2$ 
 $T_1$ 
 $T_2$ 
 $T_1$ 
 $T_2$ 

A metal, a metallic oxide, or the metal halogenides T1 and T2 fill both the unsaturation six membered rings in which N or C-RM expresses hydrogen, or :Q contains a displacer like an alkyl or a halogen here. While a desirable alkyl portion contains the carbon atom of about 1 to 6, it constitutes an allyl-compound portion with a desirable phenyl.

[0047] In the desirable example, the hole moving bed is an aromatic tertiary amine. The desirable subclass of an aromatic tertiary amine is : [0048] containing the tetrapod allyl-compound diamine which has the following formulas.

[External Character 2]

Are is a propine group here, n is the integer of 1 to 4, and it is Ar, R7, R8, and R9. It is the allyl-compound group chosen, respectively. In the desirable example, luminescence, an electron injection, and a move band contain a metal oxy-NOIDO (oxinoid) compound. The desirable example of a metal oxy-NOIDO compound is : [0049] which has the following general formulas. [External Character 3]

It is R2-R7 here. Replacement possibility is expressed. At other desirable examples, a metal oxy-NOIDO compound is: [0050] which has the following formulas. [External Character 4]

$$\begin{array}{|c|c|c|c|}
\hline
R_6 & R_7 \\
R_6 & O \\
R_4 & N \\
R_8 & R_2 \\
\hline
\end{array}$$

$$\begin{array}{|c|c|c|c|c|c|}
\hline
L_1 & L_2 \\
\hline
L_6 & L_4 \\
\hline
\end{array}$$

here -- R2-R7 a definition is given above -- having -- L1-L5 -- intensive -- 12 or a fewer carbon atom -- containing -- respectively -- separate -- the hydrogen or the carbohydrate group of a carbon atom of 1 to 12 -- expressing -- L1 and L2 -- both -- or both L2 and L3 can form the united benzo ring In other desirable examples, metal oxy-NOIDO compounds are the following formulas.

[0051]

[External Character 5]

It is R2-R6 here. Hydrogen or other replacement possibility are expressed. It is only that the above-mentioned example expresses the existing desirable organic material which is only used within an electroluminescence layer. It does not mean that they restrict the visual field of this invention, and, generally this directs an organic electroluminescence layer. Organic EL material contains the coordination compound which has an organic ligand so that the above-mentioned example may show.

[0052] As a segment electrode 403 used by the light emitting device of this invention, reflection nature metals, such as aluminum, silver, zinc, gold, and chromium, can be used, and transparent electric conduction films, such as indium teens OKISAIZU and a tin oxide, can be used as a counterelectrode 402.

[0053] As a sealing agent 405 used by this invention, it is closed with organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy. Moreover, as a protective layer 404 used by this invention, the coat material by organic insulation resins, such as inorganic insulating material, such as a silicon oxide and a silicon nitride, and epoxy, can be used.

[0054] With the image formation equipment of this invention, inorganic photo conductive materials, such as organic photo conductive materials, such as BENZO oxazole system photo conductor matter, BENZO thiazole system photo conductor matter, and triphenylamine system photo conductor matter, or amorphous silicon (a–Si) photo conductor matter, amorphous silicon germanium alloy (a–SiGe) photo conductor matter, and amorphous silicon carbon alloy (a–SiC) photo conductor matter, can be used as a photo conductors [ 1a, 1b, 1c and 1d ] photosensitive layer.

[0055] Thus, on the created element, 150nm of silicon nitrides was formed in the spatter, and the protective layer was formed for closure. In addition, protective-layer formation performed membrane formation within the same vacuum system from organic layer membrane formation. [0056] What has a big work function as an anode material organic [ Light Emitting Diode ] is desirable, and can use a tin oxide, gold, platinum, palladium, a selenium, iridium, copper iodide, etc. other than ITO used by this example.

[0057] On the other hand, what has a work function small as a cathode material is desirable, and can use Mg, aluminum, Li, In(s), or these alloys other than Mg/Ag used by this example.

[0058] About an electron hole transporting bed, the hole transportability compound expressed to the following table other than TPD can be used.

[0059] Moreover, you may use not only an organic material but inorganic material. a-Si, a-SiC, etc. are raised as inorganic material used.

[0060] As an electronic transporting bed, it is Alq3. The electronic transportability compound otherwise expressed to the following table can be used.

[0061] Moreover, dopant coloring matter as shown in the following table 10 can also be doped to an electronic transporting bed or an electron hole transporting bed.

[0062] As for a material organic [ Light Emitting Diode ], it is desirable to choose what considers spectrum luminescence with sensitivity as the photoconductor drum to be used. [0063]

[External Character 6]

CH

 $CH_3$ 

### [0064] [External Character 7] ホール輸送性化合物

$$\begin{array}{c|c} CH_s & & & \\ \hline \\ CH_s & & & \\ \hline \end{array} \begin{array}{c|c} N & & & \\ \hline \\ CH_s & & \\ \hline \end{array} \begin{array}{c|c} CH_s & & \\ \hline \\ CH_s & & \\ \hline \end{array} \begin{array}{c|c} CH_s & & \\ \hline \\ CH_s & & \\ \hline \end{array}$$

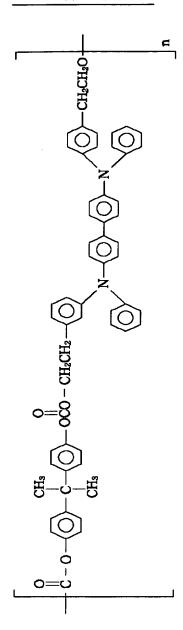
$$\bigcirc N - \bigcirc - N - \bigcirc$$

$$CH_{S}$$
  $\longrightarrow$   $N$   $\longrightarrow$   $CH = CH$   $\longrightarrow$   $Cl$ 

# [0065]

[External Character 8]

### ホール輸送性化合物



[0066] [External Character 9]

## ホール輸送性化合物

$$C_2H_5$$
 $C_2H_5$ 
 $C_2H_5$ 
 $C_2H_5$ 
 $C_2H_5$ 
 $C_2H_5$ 

$$CH = N - N$$

$$C_{2H_5}$$

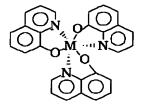
$$\bigcirc\bigcirc\bigcirc\bigcirc\bigcirc$$
 CH = N - N

$$\begin{array}{c|cccc} CH_{s} & CH_{s} \\ \hline CH_{s} & CH \\ \hline & & \\$$

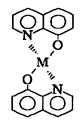
[0067] [External Character 10]

#### ホール輸送性化合物

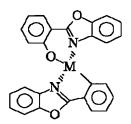
[0068] [External Character 11]



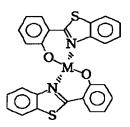
M: Al, Ga



M: Zn, Mg, Be



M:Zn, Mg, Be



M: Zn, Mg, Be

#### [0069]

[External Character 12]

$$CH_3- CH_3 \\ CH_3 \\ CH_3$$

$$CH_{3}-CH_{3} \\ CH_{3}-CH_{3} \\ CH_{3}-CH_{3$$

[0070]

[External Character 13]

$$\left(\begin{array}{c} \\ \\ \\ \\ \\ \end{array}\right)_{2}^{0}$$

[0071]

[External Character 14]

19/23

$$\bigcirc C = CH - CH = C$$

[0072]

[External Character 15]

#### ドーパント色素

[0073] <u>Drawing 9</u> is the light emitting device of another desirable mode of this invention. The luminous layer 817 which the same thing as the switching element section SW1 and the sample hold circuit section SH1 which were used by <u>drawing 8</u> was prepared on the downward substrate 801, and was prepared in inter-electrode [ of the electrodes 816 and 815b of the couple for forming a 1-bit light-emitting part on the upper substrate 901 (insulating substrates, such as glass) and this couple ] is arranged. The substrates 801 and 901 of these couples carry out opposite arrangement towards the inside, and electrode 815a on a substrate 801 and electrode 815b on a substrate 901 are electrically connected by the electroconductive glue (adhesive electrical connection object) 902.

[0074] The adh sive electrical connection object 902 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry this by adoption of screen printing, offset printing, or the dispenser applying method using the electroconductive glue by which distributed content of a conductive particle like a carbon particle, and a silver-granule child and a copper particle was carried out into an epoxy system

or phenol system heat-curing adhesives.

[0075] In order to reinforce interface adhesive strength, silane coupling agents, such as N-(2-aminoethyl)-3-aminopropyl methyl dimethoxysilane, N-(2-aminoethyl)-3-aminopropyl trimethoxysilane, 3-aminopropyl methyldiethoxysilane, and 3-glycidoxypropyltrimetoxysilane, can be made to contain in an above-mentioned lectroconductive glue.

[0076] A pewter etc. is mentioned as other examples of the adhesive electrical connection object 902.

[0077] The adhesive electric insulation object 903 is formed in the periphery section of the above-mentioned adhesive electrical connection object 902. The adhesive electric insulation object 903 is acquired by making the predetermined position of the upper substrate 901, the lower substrate 801, or its both apply and dry an epoxy system or phenol system insulation adhesives by methods, such as offset printing, screen printing, or the dispenser applying method. Under the present circumstances, it is suitable to use the manufacture method of preparing an electroconductive glue to the substrate of the direction in which insulating adhesives are formed to one substrate of the upper substrate 901 or a substrate 801, and these insulating adhesives are not formed, in the application of insulating adhesives and an electroconductive glue.

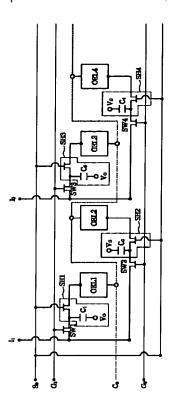
[0078] Moreover, in this invention, it can replace with the above-mentioned adhesive electric

insulation object 903, and liquid insulators, such as liquid crystal like an insulator without adhesive strength, for example, an organic solvent, a high-boiling point organic solvent, a nematic liquid crystal, cholesteric liquid crystal, and a smectic liquid crystal, can also be used. [0079] Moreover, the above-mentioned adhesive electric insulation object 903 or a non-adhesive property electric insulation object can also be made to contain coloring objects, such as a color pigment and a paint, so that it may have shading hardening. [0080] Drawing 10 is another desirable example of this invention. The luminescence equipment illustrated to drawing 10 is equipped with the parallel one chip light-emitting-device array 100 of two lines which prepared the parallel one chip light-emitting-device array located in head line 100A and consecutiveness line 100B to the move direction of photo conductors, such as a photoconductor drum. It is good that it is made to perform the writing of one line by operation of this parallel one chip light-emitting-device array 100 of two lines. [0081] Drawing 11 is the equal circuit of the parallel one chip light-emitting-device array 100 of two lines illustrated to drawing 10. The thing of the same equal circuit as the element illustrated to above-mentioned drawing 3, respectively can be used for the one chip light-emitting-device array of head line 100A and consecutiveness line 100B. [0082] the light emitting devices OEL11, OEL12, OEL13, and OEL14 of head line 100A and head line 100A with which the one chip light-emitting-device array of consecutiveness line 100B is equipped -- the light emitting devices OEL21, OEL22, OEL23, and OEL24 of ... and consecutiveness line 100B -- when ... is carried in an electrophotography copying machine, along with the main scanning direction to the move hand of cut of a photoconductor drum, more than one are arranged, respectively and it connects with 2 parallel in an active-matrix circuit this active-matrix circuit -- switching elements SW11, SW12, SW13, and SW14 -- as ... using TFT -- suitable -- \*\*\*\* -- the odd-numbered light emitting devices OEL11 and OEL13 and ... the light-emitting-device group (the 1st group) classified as OEL1 (2N-1) It connects with each gate terminal of SW1 (2N-1) in common through the gate line G(100A) 1. the odd-numbered switching elements SW11 and SW13 and ... the even-numbered light emitting devices OEL12 and OEL14 and ... the light-emitting-device group (the 2nd group) classified as OEL1 (2Ns) -- the even-numbered switching elements SW12 and SW14 and ... it connects with each gate terminal of SW1 (2Ns) in common through the gate line G(100A) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL11-OEL12, OEL13-OEL14, and ... switching element SW11-SW12 which adjoins each other in every OEL1(2N-1)-OEL1 (2Ns), SW13-SW14, and ... for

the source terminal of very SW1(2N-1)-SW1 (2Ns) each source lines I (100A)1 and I (100A)2 -- it connects in common through ... Moreover, light emitting devices OEL11, OEL12, OEL13, and OEL14 ... It connects with the common line C0 in common, and a counter lectrode is each light emitting device OEL11, OEL12, OEL13, and OEL14... It can consider as an anode or a cathode. furthermore, the switching elements SW11, SW12, SW13, and SW14 ... light emitting devices OEL11, OEL12, OEL13, and OEL14 -- the same sample hold circuit as the element of drawing 3 is connected between ... This sample hold circuit is equipped with the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train connects the gate to the common path cord S(100A) 1, and the gate is connected to the common path cord S(100A) 2, and the capacitor for charge storages of an even number train is synchronized with the rotation of a photoconductor drum, and it is set up so that the gate of the switching element for sample hold may turn on or turn off in predetermined interval time. [0083] the light emitting devices OEL21, OEL22, OEL23, and OEL24 of head line 100A and consecutiveness line 100B of parallel arrangement -- similarly in the active-matrix circuit linked to ... the odd-numbered light emitting devices OEL21 and OEL23 and ... the light-emitting-device group (the 1st group) classified as OEL2 (2N-1) It connects with each gate terminal of SW2 (2N-1) in common through the gate line G(100B) 1. the odd-numbered switching elements SW21 and SW23 and ... the even-numbered light emitting devices OEL22 and OEL24 and ... the light-emitting-device group (the 2nd group) classified as OEL2 (2Ns) -- the even-numbered switching elements SW22 and SW24 and ... it connects with each gate terminal of SW2 (2Ns) in common through the gate line G(100B) 2 And it sets in this active-matrix circuit. adjacent light-emitting-device OEL21-OEL22, OEL23-OEL24, and ... switching element SW21-SW22 which adjoins each other in every OEL2(2N-1)-OEL2 (2Ns), SW23-SW24, and ... for the source terminal of every SW2(2N-1)-SW2 (2Ns) each source lines I (100B)1 and I (100B)2 -- it connects in common through ... Moreover, light emitting devices OEL21, OEL22, OEL23, and OEL24 ... It connects with the common line C0 in common, and a counter electrode is each light emitting device OEL21, OEL22, OEL23, and OEL24... It can consider as an anode or a cathode. furthermore -- the same -- switching elements SW21, SW22, SW23, and SW24 ... and light emitting devices OEL21, OEL22, OEL23, and OEL24 -- to ... It \*\*\*\*\* a sample hold circuit and has the capacitor for charge storages, respectively, the capacitor for charge storages of an odd number train The gate is connected to the common path cord S(100B) 1, respectively, and, as for the capacitor for charge storages of an even number train, the gate is connected to the common path cord S(100B) 2, respectively. [0084] As for the light emitting device arranged to head line 100A with the luminescence

[0084] As for the light emitting device arranged to head line 100A with the luminescence equipment described above, and the contiguity light emitting device arranged to consecutiveness line 100B, it is desirable to arrange in parallel to parallel of vertical scanning, i.e., the direction of a photoconductor drum, to the move direction of a photo conductor. [0085] Drawing 12 is a drive sequence diagram in drive operation of the element illustrated to drawing 10 and 11, the source line I (100A) which becomes the relation of a contiguity light emitting device during the drive of the light-emitting-device array of head line 100A in the drive sequence illustrated to drawing 12 — the 1, 2, ..., source line I (100B) — as for the applied voltage impressed to 1, 2, and ..., it is good to set up so that it may consider as reversed polarity on the basis of C0 and the voltage average may become zero especially mutually





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JAPANESE [JP,11-198433,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

#### \* NOTICES \*

- Japan Patent Office is not responsible for any damages caused by the use of this translation.
- 1. This document has been translated by computer. So the translation may not reflect the original precisely.
- 2.\*\*\*\* shows the word which can not be translated.
- 3.In the drawings, any words are not translated.

#### **DESCRIPTION OF DRAWINGS**

[Brief Description of the Drawings]

[Drawing 1] It is the cross section of the image formation equipment of this invention.

[Drawing 2] It is the block diagram of the exposure section used with the image formation equipment of this invention.

[Drawing 3] It is the perspective diagram of the one chip light-emitting-device array on the single substrate used by this invention.

[Drawing 4] It is the representative circuit schematic of the light-emitting-device array used by drawing 3.

 $[\underline{\mathsf{Drawing}}\ 5]$  It is the drive sequence diagram of a light-emitting-device array used by  $\underline{\mathsf{drawing}}\ 4$  .

[Drawing 6] It is the block diagram of another light-emitting-device array of this invention.

[Drawing 7] It is the drive sequence diagram of the light-emitting-device array illustrated to drawing 6.

[Drawing 8] It is the cross section of a light emitting device used by this invention.

[Drawing 9] It is the cross section of another light-emitting-device section used by this invention.

[Drawing 10] It is the perspective diagram of another one chip light-emitting-device array used by this invention.

[Drawing 11] It is the representative circuit schematic of the light-emitting-device array used by drawing 10.

[Drawing 12] It is the drive sequence diagram of a light-emitting-device array used by <u>drawing 11</u>.

[Description of Notations]

1a, 1b, 1c, 1d Photoconductor drum

2a, 2b, 2c, 2d Development counter

3a, 3b, 3c, 3d Corona-electrical-charging machine

4a, 4b, 4c, 4d Contact electrification machine

5 Fixing Equipment

6 Cassette

7 Separation Electric Discharge Machine

8a, 8b, 8c, 8d Exposure means

Pa, Pb, Pc, Pd Image formation unit

31 Conveyance Belt

35 Drive Roller

36 Follower Roller

38 Motor

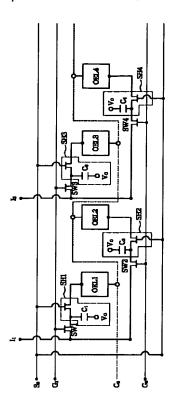
51 Fixing Roller

52 Pressurization Roller

200a The light-emitting-device array for yellow

- 200b The light-emitting-device array for Magentas
- 200c The light-emitting-device array for cyanogen
- 200d The light-emitting-device array for black
- 201 a-d Drawer wiring section
- 202a Yellow signal mechanical component
- 202b Magenta signal mechanical component
- 202c Cyano signal mechanical component
- 202d Black signal mechanical component
- 203a The gate drive circuit for yellow
- 203b The gate drive circuit for Magentas
- 203c The gate drive circuit for cyanogen
- 203d The gate drive circuit for black
- 204a Yellow signal generating circuit
- 204b Magenta signal generating circuit
- 204c Cyano signal generating circuit
- 204d Black signal generating circuit
- 205 Image-Information-Processing Equipment
- 300 One Chip Light-Emitting-Device Array Substrate
- 301 One Chip Light-Emitting-Device Array
- 302 Cutting Part Lose Contact
- 303 Glass Substrate
- 801 Substrate
- 802 810 Gate electrode
- 803 811 Gate insulator layer
- 804 812 Thin film semiconductor
- 805 813 Source electrode
- 806 814 Drain electrode
- 807 808 Couple electrode of the capacitor for charge storages
- 809 Insulator Layer
- 815 816 Couple electrode for light emitting devices
- 817 Luminous Layer

Drawing selection [R pres ntative drawing]



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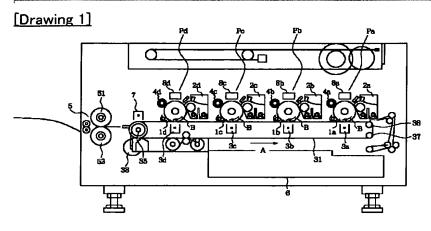
JAPANESE [JP,11-198433,A]

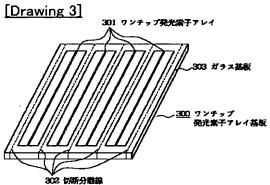
CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

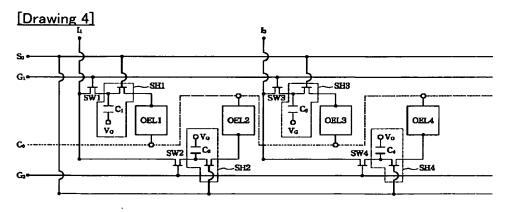
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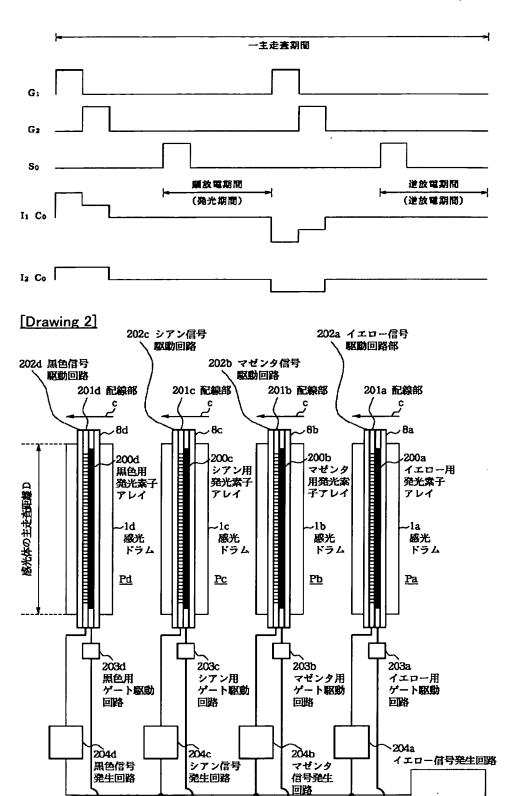
#### **DRAWINGS**





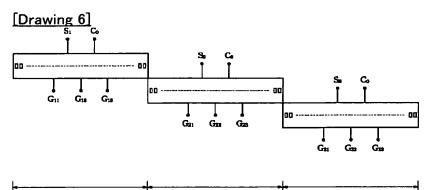


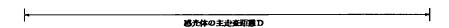
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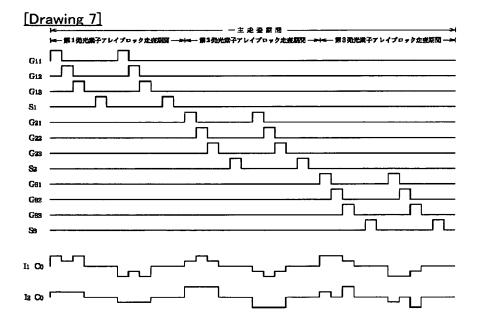


[Drawing 8]

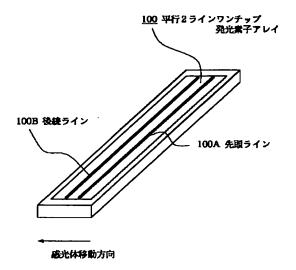
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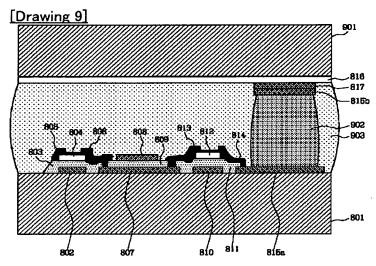






[Drawing 10]



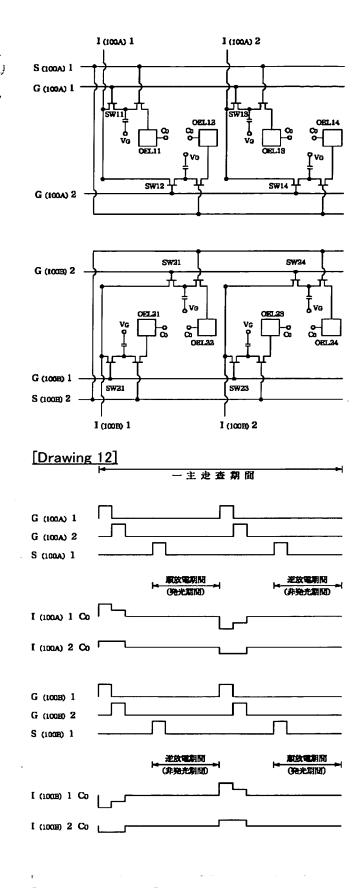


[Drawing 11]

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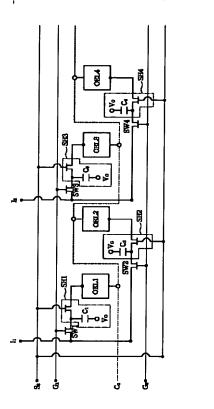
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### Drawing selection [Repr sentativ drawing]



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(19) 日本四条件 (1.P) (12) 公開特許公報 (A)

(11)特許出顧公開每号

特開平11-198433

(43)公開日 平成11年(1999)7月27日

F I B 4 1 J 3 G 0 3 G 15	
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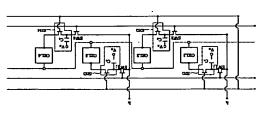
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# (54) [発明の名称] 国像形成装置及び発光装置

## (57) [聚构]

「韓国」 電子写真複写機において問題となっていた、 主き査方向における発光等性のパラッキを解消し、ブリンタ〜ッドの駆動配線教及び駆動回路ケップ数を大幅に で成し、これとともに発光環度を十分な大きさまであめ そのと回時に、長寿命を実現した発光装置を提供する点



[特許請求の範囲]

【請求項1】 a. 既光体、

・ 前配第1配接様に第1回目の走査信号を印加し、第2配接線に接第1回目の走査信号に同期させて一方極性の電圧信号を印加し、繁電圧信号に基づくキャパンタが同時に放電するように前配同時発光回路を動作させ、前配第1配接群に第2回目の走査信号を印加し、第2配接群に繁第2回目の走査信号に同期させて他方極性の電圧信号を印加し、酸電圧信号に基づくキャパンタが同時に放電するように前配同時発光回路を動作させる駆動手段

「翻水項2」 前配発光報子は、有機発光報子を有する 報子である請求項1に記載の画像形成装置。「翻水項3」 前配級光体は、電子写其感光体である請 「翻水項3」 前配級光体は、電子写其感光体である請

を有する画像形成装置。

水項1に記載の画像形成装置。 「樹水項4】 前記電子写真感光体は、有機電子写真感光体である静状項3に記載の画像形成装置。 光体である静状項3に記載の画像形成装置。 「静水項5」 前記電子写真感光体は、無機電子写真感 米体で表え替皮類3に影響の画像形成装置。

**光体である語次項3に記載の画像形成装置。** 【請求項6】 前配無機配子写真感光体は、アキルファスシリコン電子写真感光体である請求項5に記載の画像 スシリコン電子写真感光体である請求項5に記載の画像 形成装置。

「諸夫項7】 「前記スイッチング雑子は、譲取トランジスタであり、前記第1월子は、ゲート월子であり、そして問記第2월子は、ソース墓子である諸夫項1記載の回きまます。

回路を有している回路である請求項1記載の画線形成装置。 電。 【請求項10】 a. 熔光体、

b. 総光体の移動方向に対する主地登方向に複数配置した現光撃子を有する発光撃子アレイ、緊急光撃子を相で設成されて配置した複数のスメッテング撃子を有するスメッチング撃子を有するスメッチング撃子アレイを複数の群に区分し、繋区分された複数のスメッチング撃子の群に区分し、繋区分された複数のスメッチング撃子の群に超れ、スメッチング撃子の数1配換線させる第1配換線に数スメッケングを

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第十の第2組子を接続させる第2配検算、及び貸換光算 子アレイを回時に発光させる回時発光回路を有する絶光 発子アレイクロックを複数値えた[超光手段]

c、1発光撃ナアレイプロックを回時路光はけ、複数の路光撃ナアレイプロックやのプロックは、超代撃行アイプロックを分プロックは、超代勢行される第1度80年段、短び5

d. 前記第1配券様に第1回日の走査信号を印加し、第 2配券群に放射1回目の走査信号に同期させて一方括性 の配圧信号を印加し、放電圧信号に基づくキャペンタが 10 同時に放電するように前配同時発光回路を動作させ、前 配第1配券群に第2回目の走近信号を印加し、第2配券 群に放射2回目の走査信号を印加し、第2配券 報に放射2回目の走査信号に同期させて他方極性の電圧 信号を印加し、放電圧信号に基づくキャペンタが回码に 放電するように前配同時発光回路を動作させる第2駆動

を有する画像形成装置。

「持攻項11】 前記同時発光回路は、サンプルホールド回路を有している回路である請求項10記載の画像形

[請求項12] a. 彪光体、

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年に、スインチング架子の第2端子を接続させる第2配 米回路を有し、数略光雄子アフィむのの国邸略光により の電圧信号を印加し、蚊電圧信号に基づくキャパシタが 同時に放電するように前配同時発光回路を動作させ、前 群に放射2回目の走査信号に同期させて他方極性の配圧 せた複数のスイッチング菓子を有し、1行毎に1行のス ィッチング寮子を対応させ、駿スィッチング寮子を複数 ッチング寮子を複数の群に区分し、飯区分された複数の 子を共通に接続させる第1配袋群、豚スィッチング第子 模群、及び散発光珠子アレイを同時に発光させる同時発 て、前記核光体への露光を実行させる露光手段、並びに c. 前記第1配線群に第1回目の走査信号を印加し、第 2配線群に収算1回目の走査信号に同期させて一方極性 記第1配線群に第2回目の走査信号を印加し、第2配線 哲学を印括し、複句用館等に指力へキャパンタが国際に 放電するように前配同時発光回路を動作させる駆動手段 b. 感光体に対して複数列及び複数行配置した発光報子 行に配置させたスィッチング架子アレイ、各行毎のスィ を右する発光塀子アレイ、複数行の発光塀子毎に撥続さ スィッケング琳子の群毎に、スィッチング琳子の第1権 8 **\$** 

を右する画像形成装置。 [請来項13] 前配同時発光回路は、サンプルホール ド回路を右している回路である請求項12配載の画像形

【請求項14】 a. 彪光体、

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スィッチング鞍子毎に、スィッチング鞍子の第2榼子を 接続させる各行毎独立に配換した複数の第2配線群、及 び数発光琳子アレイを同時に発光させる同時発光回路を 在し、飲殆光珠子アンイからの同時殆光によった、前記 子を共通に接続させる1行毎の第1配線群、数1行毎の **メメンケンが独子の駐毎に、メメンケンが独子の魅1猶** 成光体への観光を安行させる観光手段、

模群に第1回目の走査信号を印加し、複数の第2配線群 c. 複数行の第1配線器の内の少なくとも1行の第1配 の内の少なくとも1つの第2配模群に、数第1回目の地 **査信号に同期させて一方極性の配圧信号を印加し、数配** 圧伯号に基づくキャパシタが同時に放配するように前配 国時観光回路を動作させ、世記少なくとも1行の第1配 つの第2配検群に放棄2回目の走査信号に同期させて他 方極性の処圧伯号を印加し、 繋棋報信号に基づくキャパ シタが同時に放電するように前配同時発光回路を動作さ **橡群に第2回目の走査信号を印加し、前配少なくとも1 せる餠1の彫動手段、並びに** 

回目の走査信号を印加し、複数の第2配線群の内の他の 第2配線群に、数第1回目の走査信号に同期させて他方 せ、前配他行の第1配線群に第2回目の走査信号を印加 d. 技数行の第1配接群の内の包行の第1配接群に第1 極性の虹圧信号を印加し、数電圧信号に基づくキャパツ し、前配他の第2配線群に破第2回目の走査信号に同期 させて一方極性の既圧信号を印加し、数略圧信号に基力 ペキャパンタが国際に放配するように 前記回時発光回路 タが同時に放配するように前記同時発光回路を動作さ を動作させる第2の駆動手段 を有する画像形成装置。

【請求項15】 前配回時発光回路は、サンプルホール ド回路を有している回路である請求項14記載の画像形

スインチング報子毎に、スインチング報子の第2端子を 「酵水項16】 一方向に複数配置した発光菜子を有す る発光繋子アレイ、飲発光繋子毎に接続させて配置した **複数のスィッチング駐子を有するスィッチング班子アレ イ、数スィッチング球子アフィや複数の群に区分し、数** 投税させる第2配線群、及び放発光架子アレイを同時に 発光させる同時発光回路を有し、繁発光漿子アレイから 区分された複数のスィッチング琳子の群毎に、スィッチ ングロチの第1端子を共通に接続させる第1配線群、数 の同時発光を実行させる発光手段、並びに

伯号を印加し、数包圧伯号に基乙ペキャパンタが同時に c. 前配第1配接群に第1回目の走査信号を印加し、第 2配模群に籔第1回目の走査信号に同期させて一方極性 の包圧信号を印加し、数包圧信号に基乙へキャパンタが 同時に放配するように前配同時発光回路を動作させ、前 配第1配券群に第2回目の走査信号を印加し、第2配券 群に敷第2回目の走査信号に周期させて他方極性の電圧

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放電するように前配同時発光回路を動作させる駆動手段

前記発光辮子は、有機発光辮子を有す 5葉子である請求項16に記載の発光装置。 证水顶17】

「諸女項18」 | 打記スイッケング繋子は、海殿トラン して前配第2端子は、ソース端子である請求項16記載 ジスタであり、前配第1端子は、ゲート端子であり、そ の発光装置。 【請求項19】 前記スイッチング架子アレイは、ワン チップ成形されている請求項16記載の発光装置。

「酵水項20】 前記回時発光回路は、サンプルホール ド回路を有している回路である請求項16記載の発光装

スィッチング珠子毎に、スィッチング珠子の第2端子を 接続させる第2配線群、及び鞍発光架子アレイを同時に 発光させる同時発光回路を有する発光操子アレイプロッ 【請求項21】 一方向に複数配置した発光報子を有す る発光案子アレイ、蚊発光架子毎に接続させて配置した **複数のスイッチング架子を有するスイッチング架子アレ** イ、餃スィッチング架子アレイを複数の群に区分し、鮫 区分された複数のスイッチング繋子の群毎に、スイッチ ング衆子の第1端子を共通に接続させる第1配線群、隊 クを複数備えた発光手段、

c. 1発光繋子アレイブロックを同時発光させ、複数の 発光栞子アレイプロックを各プロック毎、頃次動作させ る第1駆動手段、並びに d. 前記第1配模群に第1回目の走査値号を印加し、第 2配線群に鮫第1回目の走査信号に同期させて一方極性 の配圧伯号を印加し、核配圧伯号に基づくキャパンタが 同時に放電するように前配同時発光回路を動作させ、前 配第1配線群に第2回目の走査信号を印加し、第2配線 **群に該第2回目の走査信号に同期させて他方極性の電圧** 放配するように前記同時発光回路を動作させる第2駆動 18日を印加し、数18日18日に基づくキャパンタが同時に

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を有する発光装置。

[職水斑22] 哲記回時発光回路は、サンプケホーク ド回路を有している回路である請求項21 記載の発光装 【請求項23】 複数列及び複数行配置した発光報子を 有する発光囃子アレイ、複数行の発光囃子毎に接続させ **協続させる第1配模群、蚊スイッチング囃子毎に、スイ** ッチング栞子の第2端子を接続させる第2配線群、及び **隊発光架子アレイを同時に発光させる同時発光回路を有** ッチング寮子を対応させ、これによって複数行に配置さ **せたスィッチング囃子アレイ、各行毎のスィッチング辮** 子を複数の群に区分し、敵区分された複数のスイッチン た複数のスイッチング禁子を有し、1行毎に1行のスイ が寮子の群毎に、スィッチング寮子の第1端子を共通に し、奴発光蟒子アレイからの同時発光させる発光手段、

2配線群に放第1回目の走査信号に同期させて一方極性 の電圧信号を印加し、核電圧信号に基づくキャパシタが 同時に放電するように前配同時発光回路を動作させ、前 配第1配線群に第2回目の走査僧号を印加し、第2配線 群に蛟第2回目の走査侶号に同期させて他方極性の電圧 放電するように前記同時発光回路を動作させる駆動手段 伯号を印加し、数電圧伯号に基づくキャパシタが同時に c. 前配第1配線群に第1回目の走査信号を印加し、 を有する発光装置。

ド回路を有している回路である請求項23記載の発光装 「請求項24】 前配同時発光回路は、サンプルホール

【請求項25】 複数列及び複数行配置した発光報子を 有する発光繋子アレイ、複数行の発光辮子毎に接続させ ング繋子毎に、スイッチング繋子の第2端子を接続させ る各行毎に独立に配線した複数の第2配線群、及び酸発 ッチング栞子を対応させ、これによって、複数行に配置 させたスィッチング祭子アレイ、各行毎のスィッチング **第子を複数の群に区分し、酸区分された複数のスイッチ** に接続させる各行毎の第1配線群、数各行毎のスイッチ た複数のスイッチング寮子を有し、1行毎に1行のスイ ング珠子の群毎に、スイッケング珠子の第1結子を共通 光紫子アレイを同時に発光させる同時発光回路を有し、 数発光辮子アレイからの同時発光させる発光手段、

圧信号に基づくキャパシタが同時に放覧するように前記 c. 複数行の第1配線群の内の少なくとも1行の第1配 **線群に第1回目の走査信号を印加し、複数の第2配線群** 査信号に同期させて一方極性の電圧信号を印加し、鮫電 同時発光回路を動作させ、前配少なくとも1行の第1配 つの第2配線群に舷第2回目の走査信号に同期させて他 方極性の電圧信号を印加し、数情報信号に基づくキャパ の内の少なくとも1つの第2配線群に、数第1回目の走 **線群に第2回目の走査信号を印加し、前記少なくとも1** シタが同時に放電するように前配同時発光回路を動作さ せる第1の駆動手段、並びに

極性の電圧信号を印加し、骸電圧信号に基めくキャパツ 回目の走査信号を印加し、複数の第2配線群の内の他の 第2配線群に、鞍第1回目の走査信号に同期させて他方 せ、前配他行の第1配線群に第2回目の走査倡号を印加 し、前配他の第2配線群に該第2回目の走査信号に同期 させて一方極性の電圧信号を印加し、紋電圧信号に基づ くキャパンタが同時に放電するように前配同時発光回路 d. 複数行の第1配線群の内の他行の第1配線群に第1 タが同時に放電するように前配同時発光回路を動作さ を動作させる第2の駆動手段

ド回路を有している回路である請求項25配戯の発光装 【韻水頃26】 前記回時発光回路は、サンプルホール を有する発光装置。

発明の詳細な説明

**枠関中11-198433** 

こ、複数の感光体を一列に配列し、各々の感光体を独立 の画像を合成することによってカラー画像を形成する画 [発明の属する技術分野] 本発明は、電子写真複写機の 様な画像形成装置及びこれに用いる発光装置に関し、特 ン、マガンタ、イエロー及び既色画像を形成し、これら **に用いることによった、各般光体毎に対応させて、シア** 像形成装置に関する。

[0002]

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タ、イエロー及び既色の各々の画像情報に描んされ題節 年に、像属光手段として、それぞれレーザー光光原を設 [従来の技術] 一列に配列させた4本の電子写真感光体 させて、これによって、4本の電子写耳感光体毎にシア **t. 各4しのフーボーボ光質の略版がツトン、トガン** ン、マゼンタ、イエロー及び開色の静電階像を形成さ

せ、これらの静電潜像を現像させ、そして、これら複数 **の現像画像を合成させることによって、カラー画像を形 光光原に変えた、シアン、ャセンタ、イエロー及び無色** の静気帯像を形成させる光頂として、4本のLED光苡 を各感光体毎に配置したLED光頭画像形成装置も知ら 【0003】また、村配画像形成装置が用いたフーザー 成するアーザー光光原画像形成被置は、知られている。 ន

せて合成させるため、4本の啓光体毎に配置した4つの **ノーザー光光頌毎に、各々のフーザー光の主地型方向及 び副走査方向の両方を正確に一致させることは、離しい** ン、マゼンタ、イエロー及び開色の各々の画像を一致さ [0004] 村記フーナー光光原画像形成装置は、ツア れている。

EDチップは、チップ毎にその発光物性が相違している 同様の繋ぎ型しED琳子によって臨光させ、土地査方向 において、その騒光条件がチップの発光特性毎に相違し てしまい、この結果、主走査方向の画像円現性を悪くさ L配した主走査方向及び副走査方向の両方を一致させる 要求は、比較的簡単に実現させることができるが、LE を一列に繋ぎ合せてなる繋ぎ型LED辮子とする必要が ため、感光体の移動に対する主走査臨光全域は、前配と Dが坑伯なものでもるのに枯えた、 枚数の1 EDチップ **あるため、からに抵倒なものとなったいた。 からに、し** 【0005】 一方、前記1ED光謀画像形成装置では、 のが現状である。 <del>\$</del>

写機では、前記した繋ぎ型しED繋子を複数の感光体毎 [0006]また、カラー画像を形成できる電子写真板 に配置する必要があるが、この場合でも、複数の感光体 年に配置した複数の繋ぎ型LED菓子間での発光特性が 子間での発光特性を閲覧する難しい要求が新たに発生し 日泣してしまい、各處光体毎に配置した繋ぎ型LED繋

[0000]

ය

る戦倒は、繋ぎ型LED寮子を露光装置に用いた画像形 プリンタヘッドの駆動配線数及び駆動回路チップ数を大 **偈に低放し、これとともに発光環度を十分な大きさまで** |発明が解決しようとする課題| 発明が解決しようとす **あめ、いれによった、色子写真核写数のプロセススピー** た、主走在方向における発光特性のバラツキを解消し、 成装置、特に電子写其模写機において問題となってい ドを大幅に早める点にある。

発光算子の発光時間を大幅に増大させ、プリンタヘッド 【0008】さらに、発明が解決しようとする映図は、 の寿命を大幅に長める点にある。

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(6000)

回目の走査信号に同期させて他方極性の電圧信号を印加 **体、b. 燃光体の移動方向に対する主走至方向に複数配** 置した発光第子を有する発光繋子アレイ、餃発光漿子毎 に接続させて配置した複数のスイッチング菓子を有する 光体への露光を実行させる露光手段、並びに c. 前配第 1配袋群に第1回目の走査信号を印加し、第2配袋群に 放第1回目の走査伯号に同期させて一方極性の配圧信号 **を印加し、蚊亀圧伯号に払めくキャパンタが同時に放電** するように前記同時発光回路を動作させ、前記第1配券 群に第2回目の走査伯号を印加し、第2配線群に該第2 し、蚊包圧信号に払るペキャパシタが同時に放配するよ うに前配同時発光回路を動作させる駆動手段、を有する 画像形成装置に、第1の特徴を有し、第2に、a . 感光 メィッサング駐十ピマイ、 類スィッチング駐十ピマイガ 愍光体、b. 感光体の移動方向に対する主走査方向に模 子毎に協続させて配置した複数のスイッチング菓子を有 するスィッチング架子アレイ、鮫スィッチング架子アレ イを複数の群に区分し、酸区分された複数のスイッチン 接続させる第1配線群、籔スイッチング第子毎に、スイ ッテングサ子の第2端子を接続させる第2配線群、及び 蚊兔光珠子アレイを同時に発光させる同時発光回路を有 し、奴秘光珠子アフイかのの回母始光によった、村町感 複数の時に区分し、蚊区分された複数のスィッチング等 数配置した結光塀子を右する発光辮子アレイ、蚊発光辯 子の群毎に、スイッチング寮子の第1端子を共通に接続 が栞子の群毎に、スィッチンが珠子の第1雄子を共通に 【戦闘を解決するための手段】本発明は、第1に、a.

2配券群に駭第1回目の走査信号に同期させて一方極性 **信号を印加し、骸電圧信号に基づくキャパシタが同時に** 行毎に対応させて複数行に配置させたスイッチング葉子 アレイ、蚊1行毎のスィッチング架子アレイを複数の群 に区分し、蚊区分された複数のスイッチング幹子の群毎 配換した複数の第2配線群、及び酸発光架子アレイを同 からの同時発光によって、前記数光体への臨光を実行さ せる露光手段、c. 複数行の第1配線群の内の少なくと も1行の第1配線群に第1回目の走査信号を印加し、複 **昇子アレイを複数の群に区分し、酸区分された複数のス** を共通に接続させる第 1 配棒群、餃スイッチング堺子毎 同時に放電するように前記同時発光回路を動作させ、前 記第1配線群に第2回目の走査債号を印加し、第2配線 群に該第2回目の走査信号に同期させて他方極性の電圧 放電するように前記同時発光回路を動作させる駆動手段 a. 感光体、b. 感光体に対して複数列及び複数行配置 スィッチング葉子の第2端子を接続させる各行毎独立に 時に発光させる同時発光回路を有し、鮫発光栞子アレイ ング栞子を有し、数1行毎に対応させて複数行に配置さ に、スイッチング寮子の第2端子を接続させる第2配線 及び放発光繋子アレイを同時に発光させる同時発光 て、前記成光体への露光を実行させる露光手段、並びに 前配第1配線群に第1回目の走査信号を印加し、第 の亀圧信号を印加し、鞍亀圧信号に基乙くキャパンタが した発光繋子を有する発光繋子アレイ、1行毎の発光築 に、スイッチング寮子の第1端子を共通に接続させる1 印加し、第2配線群に放第2回目の走査信号に同期させ て他方極性の電圧信号を印加し、数電圧信号に基づくキ r パシタが同時に放電するように前記同時発光回路を動 作させる第2駆動手段を有する画像形成装置に、第2の 幹徴を有し、第3に、a. 戯光体、b. 感光体に対して 複数列及び複数行配置した発光繋子を有する発光繋子ア レイ、1行毎の発光器子毎に接続させた複数のスイッチ **せたスィッチング禁干アレイ、数1行毎のスィッチング** 子毎に接続させた複数のスイッチング架子を有し、駿1 を有する画像形成装置に、第3の特徴を有し、第4に、 行毎の第1配様群、数1行毎のスイッチング報子毎に、 イッケング繋子の群毎に、スイッチング繋子の第1端子 回路を有し、眩発光漿子アレイからの同時発光によっ #

信号を印加し、複数の第2配線群の内の他の第2配線群 に同期させて他方極性の電圧信号を印加し、数情報信号 光回路を動作させる第1の駆動手段、並びに d. 複数行 に基づくキャパンタが同時に放電するように前記同時発 の第1配線群の内の他行の第1配線群に第1回目の走査 **該第1回目の走査信号に同期させて一方極性の電圧信号** を印加し、蚊亀圧信号に基乙ペキャパシタが同時に放電 するように前記同時発光回路を動作させ、前記少なくと 記少なくとも1つの第2配検群に数第2回目の走査信号 も1行の第1配線群に第2回目の走査偕号を印加し、「 යි

> 期させて一方極性の包圧信号を印加し、鞍包圧信号に基 路を動作させ、前配第1配線群に第2回目の走査信号を

駆動手段、並びに d. 前配第1配線群に第1回目の走査 伯号を印加し、第2配格群に放第1回目の走査信号に同 ムヘキャパンタが同時に放配するように前配同時発光回

発光珠子アレイブロックを同時発光させ、複数の発光珠

発光第子アレイプロックを複数備えた**証光**手段、c. 1 **チアレイブロックを各プロック毎、頃次動作させる第1** 

数の第2配線群の内の少なくとも1つの第2配線群に、

ング菊子の第2端子を接続させる第2配線群、及び酸発 光塀子アレイを同時に発光させる同時発光回路を有する

させる第1配模群、版スイッチング報子毎に、スイッチ

**佰母に描んへキャパンタが同時に放配するように付配回** 時発光回路を動作させる第2の駆動手段を有する発光数

置に、第8の特徴を有する。

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た複数のスイッチング架子を有し、1行毎に1行のスイ

放電するように前記同時発光回路を動作させ、前記他行 発光菓子アレイ、餃発光菜子毎に接続させて配置した模 に、該第1回目の走査信号に同期させて他方極性の電圧 の第1配線群に第2回目の走査倡号を印加し、前配他の 第2配線群に舷第2回目の走査値号に同期させて一方極 第2の駆動手段を有する画像形成装置に、第4の特徴を 有し、第5に、一方向に複数配置した発光辮子を有する 11日を印加し、核電圧信号に基づくキャパンタが同時に 性の電圧信号を印加し、数電圧信号に基心へキャペンタ が同時に放電するように前記同時発光回路を動作させる 数のスイッチング栞干を有するスイッチング栞子アレ

に第2回目の走査信号を印加し、第2配線群に散第2回 るように前記同時発光回路を動作させ、前記第1配線群 し、核電圧信号に基づくキャパシタが同時に放電するよ イ、餃スイッチング架子アレイを複数の群に区分し、駮 接続させる第2配線群、及び鞍発光辮子アレイを同時に 発光させる同時発光回路を有し、鮫発光漿子アレイから 配線群に第1回目の走査信号を印加し、第2配線群に該 第1回目の走査信号に同期させて一方極性の電圧信号を 印加し、核電圧信号に基づくキャパンタが同時に放電す 区分された複数のスィッチング鉗子の群毎に、スィッチ スィッチンが囃子毎に、スィッチンが架子の第2端子を の同時発光を実行させる発光手段、並びにc.前配第1 ング栞子の第1端子を共通に接続させる第1配線群、隊 目の走査信号に同期させて他方極性の電圧信号を印加

間号を印加し、第2配検群に散第1回目の走査倡号に同 置した発光架子を有する発光塀子アレイ、眩発光塀子毎 スィッチング栞子アレイ、版スィッチング蚦子アレイを 複数の群に区分し、駿区分された複数のスイッチング報 ング架子の第2端子を接続させる第2配線群、及び鞍発 発光霖子アレイプロックを同時発光させ、複数の発光舞 路を動作させ、前記第1配線群に第2回目の走査個号を r パシタが同時に放電するように前配同時発光回路を動 を有し、第7に、複数列及び複数行配置した発光祭子を 有する発光塀子アレイ、複数行の発光架子毎に接続させ 光葉子アレイを同時に発光させる同時発光回路を有する 駆動手段、並びにd.前配第1配線群に第1回目の走査 期させて一方極性の電圧信号を印加し、眩電圧信号に基 **ろくキャパシタが同時に放電するように前配同時発光回** 印加し、第2配模群に該第2回目の走査信号に関期させ て他方極性の電圧信号を印加し、数電圧信号に基づくキ 作させる第2駆動手段を有する発光装置に、第6の特徴 光装置に、第5の特徴を有し、第6に、一方向に複数配 に接続させて配置した複数のスイッチング架子を有する させる第1配線群、骸スイッチング囃子毎に、スイッチ **子アレイブロックを各ブロック毎、頃次動作させる第1** うに前記問時発光回路を動作させる駆動手段を有する発 子の群毎に、スィッチング報子の第1端子を共通に接続 発光栞子アレイプロックを複数儲えた発光手段、c. 1

ッチング塀子の第2端子を接続させる第2配線群、及び 放発光菜子アレイを同時に発光させる同時発光回路を有 子を複数の群に区分し、酸区分された複数のスイッチン **設続させる第1配券群、欧スイッチング第子毎に、スイ** ッチング琳子を対応させ、これによって複数行に配置さ **セたスィッチング数子アレイ、各行毎のスィッチング**数 グ琳子の群毎に、スイッチング琳子の第1媼子を共通に し、蚊殆光栞子アレイからの同時殆光させる殆光年段、 **毎照平11-198433** 

同時に放電するように前配同時発光回路を動作させる駆 に、複数列及び複数行配置した発光架子を有する発光架 並びにc. 前記第1配模群に第1回目の走査値号を印加 し、第2配袋群に歓祭1回目の走査伯号に同期させて一 方極性の配圧伯号を印加し、数配圧伯号に基づくキャパ シタが同時に放電するように前配同時発光回路を動作さ せ、前記第1配券群に第2回目の走査信号を印加し、第 2配線群に放第2回目の走査信号に同期させて他方極性 の亀圧信号を印加し、数亀圧信号に基づくキャパンタが 助手段を有する発光装置に、第7の特徴を有し、第8 2

路を動作させ、前配他行の第1配線群に第2回目の走査 の走査伯号を印加し、前配少なくとも1つの第2配検時 **身を印加し、蚊債報佰身に払づくキャパンタが問時に放** 電するように前記同時発光回路を動作させる第1の駆動 配線群に第1回目の走査信号を印加し、複数の第2配線 群の内の他の第2配検群に、紋第1回目の走査倡号に同 伯号を印加し、前記他の第2配線群に販第2回目の赴査 伯号に同期させて一方極性の包圧伯号を印加し、蚊包圧 群に区分し、蚊区分された複数のスイッチング類子の群 1配袋時の内の少なくとも1行の第1配袋群に第1回目 動作させ、前配少なくとも1行の第1配線群に第2回目 に放弃2回目の走査伯号に同期させて他方極性の電圧信 期させて他方極性の配圧信号を印加し、敵電圧信号に基 ムヘキャパンタが同時に放気するように前配同時始光回 チングサチアレイ、各行毎のスイッチング琳子を複数の に、スイッチング第子の第2端子を投税させる各行毎に 独立に配換した複数の第2配線群、及び酸発光帯子アレ キャパシタが同時に放電するように前配同時発光回路を 手段、並びにd. 複数行の第1配線群の内の他行の第1 子アレイ、複数行の発光繋子毎に稜続させた複数のスイ ッチング寮子を有し、1行毎に1行のスイッチング瑋子 を対応させ、これによって、複数行に配置させたスイツ イを同時に発光させる同時発光回路を有し、歓発光垜子 アレイからの同邸略光させる略光年段、c. 複数行の銘 の走査信号を印加し、複数の第2配格群の内の少なくと も1つの第2配検群に、紋第1回目の走査個号に周期さ せて一方極性の電圧信号を印加し、敵電圧信号に払ろく 毎に、スィッチング囃子の第1端子を共通に接続させる 各行毎の第1配模群、蚊各行毎のスイッチング報子毎 ೫ ន

【0012】本発明の好ましい第4の協模例では、前記 スィンケング駐子は、海段トランジスタであり、前配算 怒光体は、右接または無機配子母耳感光体である。

【0013】本発明の好ましい第5の態模倒では、前記 1 絡子は、ゲート結子であり、そして前配第2端子は、 ソース粒子かわる。

スィッチング群子アレイは、ワンチップ成形されてい

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|発明の英栖の形態||本発明の具体例を図面に従って説 明する。図1は、本発明の発光装置を露光装置として用 いた画像形成装置、特にカラー電子写真複写機の断面図 [0015] 同図に示すカラー複写機では、用紙等の被 **プリント枯む、カセット6に収削されており、画像形成** (以下、プリントともいう) の動作に伴ってカセット6 5. 仮送ペルト31は配動ローテ35k2本の従動ロー ラ36及び37との間に懸架されて撤送部を形成し、こ こで、駆動ローラ35がモータ38によって回転駆動さ れることにより、復送ペルト31はローラ35とローラ お、その走行する方向はベクト31の下側において図中 から叙述部に向けて被ブリント材を駆動部へ給紙させ 36及び37との間を住復走行することができる。な 矢印Aに示す方向である。

けられる。これら画像形成ユニットPa, Pb, Pc及 びPdは、それぞれ同様の構成を有するものであり、以 F、第1色目の画像形成ユニットP a を例にとりその構 【0016】 慈法ペルト31の既在する方向に沿って4 単位の画像形成ユニットPa, Pb, P c 及びP d が散 成を低略的に説明する。

光する前配ワンチップ発光菜子アレイを用いた露光手段 8 aからの発光によって、原稿画像のイエロー成分の光 [0011] 画像形成ユニットPaにおいて、概述ベル 体、すなわち感光ドラム1gが配設される。感光ドラム 1 a の回転に伴い、その数面の感光層は、接触帯電器で **体成した一大井和路4aによった一扱に井町される。そ** の後、この帯電感光層に、膨光ドラムの主走査全域を配 の勘像が形成された部分は煩吹その回転により移動した 現像器2gから供給されるイエロートナーにより現像さ イエロー現像器 2 a の位置に至り、その位置でイエロー ト31に近接して矢印B方向に回転する円筒状の膨光 像がは光され、イエロー成分静気潜像が形成される。 れて可視化される。

これにタイミングを合わせて被プリント材が、概述ペル [0018] イエロートナー録け、戯光ドラム1ョの回 低により、このドラム1ョとは撤送ペルト31を介して 散けられるコロナ帯包器38を有した転写部位に至る。

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ト31により転写部位に被送される。次に、コロナ帯電 器3gに転写パイアスが印加されることにより、敷光ド ラム1a上のイエロートナー像は、啓光ドラム1aの回 **育に守った被プリントな上に角砕された作く。**  [0019] その後、感光ドラム1aの回転に伴い、そ ず)により除去され、次の画像形成工程に入り得る状態 になる。一方、イエロートナー彼が転写された被プリン ト材は、搬送ベルト31により第2色目の画像形成ユニ の上に残留するトナーは、クリーニング装置 (図示せ ットPbによるプリント的に撤送される。 【0020】第2色目の画像形成ユニットPbは、上述 した第1色目の画像形成ユニットPaと同様な構成であ り、上記と回様にして、ワンチップ発光器子アレイを用 いた露光手段 8 bからの発光によって、原稿画像のマゼ ンタ成分の光像が露光され、マゼンタ成分静電潜像が形 成され、マゼンタトナーによる現像が行われ、得られた 色目のイエロートナー像に重ね合わせて転写される。同 **扱に、被プリント材の概説に守った、画像形成コーット** P.c 及びP d での各ワンチップ発光漿子アレイを用いた アン成分静電潜像及び黒色成分静電潜像を形成し、それ ぞれの工程において、シアントナー像及びブラックトナ **ヶゼンタトナー像がその転写部で被プリント材上に第1** 露光手段8c及び8dによる発光によって、それぞれシ 一像が重ねて転写させ、被プリント材上に4色のトナー 像を重ね合わせたカラー画像が形成される。

[0021] 上記第2色目、第3色目及び第4色目の画 像形成ユニットPb,Pc及びPdでは、第1色目の画 像形成ユニットPaと同様に、それぞれ、感光ドラム1 b,1c及び1d、マゼンタ現像器2b,シアン現像器 2 c及び無現像器2 d、コロナ帯電器3 b,3 c及び3 d、並びに、接触帯電器で構成した一次帯電器4b,4 c 及び4 d が用いられている。

[0022] 画像形成ユニットPa, Pb, Pc及びP dの全行程を終了すると、4色のトナー像が転写された 皮プリント材は、さらに搬送され、分離除電路 7 で除電 みれた後、被扱くグト31かの分離されて、一対の応格 ローラ51及び加圧ローラ52を備えた定着装置5に送 られる。ここでは通常、所定温度に加敷されているロー ラ51及び52のニップ部によって加圧及び加熱が行わ れ転写トナー像の定着が行われる。その後、被プリント 材は、複写機の機外に排出される。

[0023] 図2は、図1に図示する画像形成ユニット Pa, Pb, Pc及びPdの詳細を図示するプロック図 [0024] 画像形成ユニットPa, Pb, Pc及びP dは、それぞれ、感光ドラム1a, 1b, 1c及び1d に対応させて配價した腐光手段8a,8b,8c及び8 dには、イエロー用強光珠子アレイ200a, マゼンタ 用強光繋子アレイ2005, シアン用発光繋子アレイ2 00 c及び黒色用発光架子アレイ200dが装填されて

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または同一のa-Si感光層)が用いられ、従って、腎 [0028]また、図中の矢印Cは、回転移動する感光 体の副走査方向を示し、啓光ドラム1a, 1b, 1c及 び1 dは、同一の直径 (例えば、直径60cm、30c m、20cm)のアルミニウム管が用いられ、また同一 国の彪光陽(例えば、4本とも、同一の有機光気体層 **赴査方向Cの移動遊度は、各々同一に設定した。** 

200dで用いたワンチップ総光珠子アレイ301を数 段における、ガラス基板303上に飲けたワンチップ発 【0029】図3は、上記したイエロー用発光珠子アレ 凶퇃分艦楼302に沿って、4本に切断分艦する前の工 イ200a, レゼンタ用箱光群子アレイ200b, シア ン用発光繋子アレイ200c及び隔色用発光繋子アレイ けた単一基板となるガラス基板303から、それぞれ、 光珠子アレイ 基板300の年模図である。 2

[0030] 本発明で用いるガラス芸板303の大きさ には、発光類子アレイをワンチップで形成できる大きさ でもたば、年に動限がない。

**子アレイ301年の毎街回路を図示する。 発光サ子OE** L1、OEL2、OEL3、OEL4・・・は、電子事 【0031】図4は、図3に図示するワンチップ強光辯 マトリクス回路では、スイッチング寮子SW1、SW ន

2、SW3、SW4・・・として、辞棋トランジスタを として区分された発光報子群(第2の群)は、個数番目 N)の各ゲート増子にゲート数G2を通して共通に投税 数である。そした、このアクティブマトリクス回路にお いて、隣り合う発光架子0EL1-0EL2、0EL3 N)毎を踏り合うスイッチング母子SW1-SW2、S 其故事機に搭載された時、感光ドラムの移動回転方向に 発光珠子群(第1の群)は、布数毎目のスイッチング鞍 **場子にゲート様G1を通して共通に接続され、偶数毎目** される。上記「N」は、1、2、3、4、5・・・の数 **毎のソース猶子に、各ソース様 l 1、 l 2・・・を通して** クティプマトリクス回路に接続される。このアクティブ W3-SW4, ... SW (2N-1) -SW (2N) 対する主走査方向に沿って、一列に、複数配置され、ブ OEL3、・・・OEL (2N-1) として区分された 子SW1、SW3、・・・SW (2N-1) の各ゲート の発光数子OEL2、OEL4、・・・LEL (2N) 共通に接続する。また、発光繋子0mL1、0mL2、 OEL3、OEL4・・・の対極は、コモン数Coに共 用いるのが適しており、奇数番目の発光類子0 EL1、 -OEL4, ...OEL (2N-1) -OEL (2 のスイッサング駐子SW2、SW4、・・・SW (2 通に接続され、それぞれの発光索子OEL1、OEL ຂ 4

【0032】本部町の好ましい例では、スイッサング路 子SW1、SW2、SW3、SW4・・・と結光報子O EL1, OEL2, OEL3, OEL4・・・との間に

2、0EL3、0EL4・・・のアノードまたはカソー

アイ200c及び駐色用発光碟子アレイ200dは、そ 光または非発光のいずれか一方に制御される。イエロー チアレイ200b, シアン用発光繋子アレイ200c及 信号駆動回路(I C)202a,マゼンタ信号駆動回路 (IC) 202h, シアン何中語毎回路 (IC) 202 れらの駆動回路による動作によって、各発光報子は、発 b, シアン信号発生回路204c及び黒信号発生回路2 04 dからの画像値号に応じた、路光群子アレイの路光 動作を制御することが出来る様に散定されている。上記 イエロー用発光繋子アレイ200a, マゼンタ用発光繋 ゼンタ用発光繋子アレイ200b,シアン用発光繋子ア c 及び黒信号駆動回路(I C) 2 0 2 dに接続され、こ 2016, 201c, 及び2014を通して、イエロー 例えば1200dpiの高解像度で一列に配列させた7 れぞれ、南密度の引き出し様からなる配検部201a, び黒色用発光報子アレイ200dで用いた発光辮子は、 信号発生回路204a,マゼンタ信号発生回路204 、る。これらのイエロー用発光整子アレイ200a, フィ(配列体)を形成したいる。

シアン及び黒色偕号の画像偕号の制御は、CPU (図示 a, マゼンタ用発光繋子アレイ200b, シアン用発光 には、下記スイッチング業子回路及びサンプルホールド れぞれの駆動動作のタイミングは、イエロー用ゲート駆 回路203dによって、制御されている。そして、かか **セず)内の画像信頼処理装置205によって、実行され** 聨子アレイ200 c 及び既色用発光珠子アレイ200 d 回路が散けられており、これらの回路中のゲート繰のそ シアン用ゲート駆動回路203c及び黒色用ゲート駆動 動回路203a,マゼンタ用ゲート駆動回路203b, 【0025】また、イエロー用発光繋子アレイ200 るゲート駆動動作の制御、並びにイエロー、マゼンタ、

00c及び200dは、例えば、600dpi以上のよ うな高解像度である1200dpi解像度、又は、それ 00dは、感光ドラム1a, 1b, 1c及び1dの回転 200a, マゼンタ用築光葉子アレイ200b, シアン 用発光繋子アレイ200c及び開色用発光繋子アレイ2 移動に対する主走査方向における主走査距離Dの全域を いる。これらの発光繋子アレイ200a, 200b, 2 以上の高解像度で配列した複数の発光珠子が感光体の主 走査距離Dの全域をカパーするワンチップに集積されて 【0026】本発明で用いたイエロー用発光鞍子アレイ 優って配置したワンチップ発光珠子アレイが用いられて

イ200b, シアン用発光繋子アレイ200c及び開色 用発光葉子アレイ2004で用いた上記ワンチップ発光 **寮子アレイは、下述する単一基板から作成し、それぞれ** 【0027】本発明の好ましい具体例では、上記イエロ -用発光繋子アレイ200g,マゼンタ用発光繋子アレ 4 本に切断分離して得たものを使用する。

のゲートをオンに数定するためのゲートオンパルスが印 いて、ゲート終ら1、G2へのゲートオンパルスと同類さ せて、ソース袋 11、12には、画像信号に応じた改祐値 を基準とする)のパルスが印加される。この一方極性電 圧伯号は、画像情報の格職情報に応じさせて、それぞれ **画像存数の略質控盤に応じゃせて、ペケス結またけパケ** 智徴用キャパンタCl、C2、C3、C4・・・に画像情報 として智権保持された配荷を発光辮子〇EL1、〇EL 2、0m13、0m14・・・に対して風放幅させ、発 **光さむるために、サンプクホールド用スイッチング駐子** 加される。このゲートオンパルスの印加時期は、既治智 徴用キャパシタC1、C2、C3、C4・・・に配荷が十分 [0033] 図5は、図4に図示するアクティブマトリ クス回路の野勢を図示している。続光ドラムへのレーサ **ーによる一走査期間に対応する一主走査期間の前半にお** の一方極性電圧信号(極性は、接続機C0への印加電圧 ス数を変化させることができる。接続線S0には、電荷 の核高値が設定されている。また好ましい別の例では、 に充気されてから動作させる様に設定される。

て、**虹荷智徴用キャパンタC1、C2、C3、C4・・・**に [0034] 統く一主走査期間の後半において、ゲート 袋G1、G2へのゲートオンパルスと同期させて、ソース 校1119には、前半の期間で用いた一方極性電圧信号の パルスとは逆極性の知圧信号が印加され、この際、前半 DC成分をできるだけ少なくするように散定するのが好 **蓄積保持された電荷を発光塀子OEL1、OEL2、O** EL3、OEL4・・・に対して逆放戦する。この逆放 ましい。被約数Solcは、世半の時と同様の動作によっ 電圧信号と後半電圧信号との電圧平均をゼロに設定し、 気により非発光状態を形成する。

込まれている。この際、図6の例では、時分割数3の時 [0035] 図6は、本独明の発光探子アレイの好まし い例の1つを図示する。この発光漿子アレイは、第1発 光珠子アレイブロック、第2発光珠子アレイブロック及 び鮮る糖光母子アレイプロックからなる3つのプロック に区分され、各プロック毎を図4に図示する回路が組み

S

ト棒ブロック (G11、G12、G13) 、第2ガート榛ブロ (G31、G32、G33) が配券されている。情報信号線に 対応するソース様は、各発光漿子アレイブロック毎に共 面に配線されてもよく、これによって配線数を減少させ に、独立に情報線を配線することもでき、これによって 分割駆動用配線に設定され、各プロック毎に、第1ゲー ることができる。また、各発光珠子アレイプロック毎 ック (G<sub>21</sub>、G<sub>22</sub>、G<sub>23</sub>) 及び第3ガート様プロック 一主走査期間の時間を大幅に短縮することができる。

じさせる様に、接続様S1、S2及びS3にゲートオンパ ルスを印加する。また、前半走査によって、逆放電を生 【0036】 第1発光聲子アレイブロック、第2発光聲 それぞれ前半走査と後半走査とを有し、前半走査によっ て、順放電を生じさせ、後半走査によって、逆放電を生 **チアレイブロック及び第3點光跺子アレイブロックは、** じさせ、後半走査によって、順放電を生じさせても良 [0031]図1は、図6の発光繋子アレイの慰勧例を 図示している。第1ゲート様プロック (G11、G12、G 13) へのゲートオンパルスの印加関始によって、電荷蓄 った、各プロック毎で、発光繋子からの発光を同時に動 (G<sub>11</sub>、G<sub>12</sub>、G<sub>13</sub>) へのゲートオンパルスの印加関始 **ートギンパケスの臼が関始に げった、 各種植類指用キャ** 作させることができる。続いて、第1ゲート様ブロック 箱用キャパンタへの充電が開始され、接続機S1へのグ パシタから各発光辮子への放電が開始される。これによ 俊穂様S1、S2及びS3へのゲートオンパルスの印加関 始によって、各電荷蓄積用キャパシタから各発光報子〜 によって、電荷蓄積用キャパシタへの充電が開始され、 の逆放電が開始される。

(G<sub>31</sub>、G<sub>32</sub>、G<sub>33</sub>) についても動作させ、一主走査が [0038] 上記同様に、頃衣、第2ゲート様ブロック (G<sub>21</sub>、G<sub>22</sub>、G<sub>23</sub>) 及び第3ゲート様プロック 東行される。 【0039】図8は、図4に図示した回路で用いた囃子 は、甚板であり、ガラス、プラスチックなどの絶縁物が ト電極802、ゲート絶縁膜803、薄膜半導体層80 4及びソース配極805及びドレイン電極806によっ て構成した第1トランジスタ構造部を有している。サン プルホールド回路部SH1は、一対の配摘807・80 8及び数一対の包御間に数けた絶談数809によって構 ス電極813及びドレイン電極814によって構成した 第2トランジスタ構造部を有している。発光葉子部〇E L1は、一対の配極815・816及び数一対の配極間 が散けられている。スイッチング辮子部SW1は、ゲー 成した電荷蓄積用キャパシタ部、並びにゲート電極81 0、ゲート絶縁膜811、薄膜半導体層812及びソー サンプルホールド回路部SH1及び発光繋子部OEL1 用いられる。基板上には、スイッチング繋子部SW1、 構造の1ピットに関する断面図を示す。図中、801

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に設けた発光層817によって構成した発光架子部であ

晶シリコンを用いることができ、またゲート絶縁膜80 ルフナスシリコン、斑似多枯晶シリコンまたは薄膜単結 1 で用いた一対の配価は、その一方をアノードとし、他 **方をカソードとし、発光照射方向に対応する電極として** tt、ITO(インジケム・慇懃化物)、酸化島などの過 銀、亜鉛、金、クロムなどの反射性金属膜を用いるのが 部の薄膜半導体層804及び812としては、薄膜アモ ンタルを用いることができる。また、発光繋子部OEL [0040] 本発明で用いた第1及び第2トランジスタ 3及び811としては、膵膜強化シリコンや薄膜酸化タ 明導電膜を用い、他方の電極としては、アルミニウム、 年ました。

めに、鮫発光層を封止材によって罹うのが好ましい。 か [0041]また、本発明では、発光層の劣化を妨ぐた かる封止材としては、酸化シリコン、強化シリコンなど の無機絶縁物質やエポキシなどの有機絶縁樹脂を用いる ことができる。

[0042]次に、本発明で好適に用いられる発光層8 17は、有機エレクトロ・ルミネセンス(0EL)であ [0043] 本発明で用いることが出来る0ELの具体 るが、本発明では、無機臣しを用いることも出来る。

例を下記に記載する。

ang等のアメリカ特許第5,294,869号;Ta ng等のアメリカ特許第5,294,870号) に関示 5, 211号; Perry等のアメリカ特許第4, 95 リカ特許第5,073,446号;VanSlyke等 Slykeのアメリカ特許第5, 151, 629号;T のものを用いることができる。EL層は腸極と接触する 有機ホール注入及び移動帯と、有機ホール注入及び移動 帯と接合を形成する電子注入及び移動帯とからなる。 ホ Scozzafava OEPA 349, 265 (199 507号; Van Sly k e 毎のアメリカ特軒第4, 7 0, 950; Littman等のアメリカ特許第5, 0 のアメリカ特許第5, 059, 862号; Van Sly ke等のアメリカ特許第5,061,617号;Van **一ル住入及び移動帯は単一の材料又は複数の材料から形** 5, 047, 687号; Scozzafava箏のアメ 【0044】本発明で用いるOELでの材料としては、 号:Van Slyke等のアメリカ特許第4,539, Tangのアメリカ特許第4,356,429 20, 432;Tang等のアメリカ特許第4, 76 9, 292号; Tang等のアメリカ特許第4, 88 59, 861号; Van Siy keのアメリカ特軒第

材料又は複数の材料から形成されえ、関極及び、電子性 **電子移動層と接触する電子注入層からなる。ホールと電 落着により堆積されるが、他の従来技術によりまた堆積 帯の間に介装される連続的なホール移動層と接触するホ** ル往入及び移動帯の接合に隣接する電子往入及び移動帯 **内で発生する。〇EL陌を形成する化合物は典型的には** - ル往入層からなる。同様に包子往入及び移動符は単一 入層とホール住入及び移動帯の関に介装される連続的な 子の再結合とルミネセンスは配子往入及び移動帯とホー されうる。 2

【0045】好ましい契施例ではホール住入層からなる **有機材料は以下のような一般的な式を有する:** [0046]

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OHNZHC-R

T1、T2は水繋を数すか又はアルキル又はハロゲンの ような個換器を含む不飽和六回数を共に做たす。好まし いアルキル部分は約1から6の段業原子を含む一方でフ Mは金属、金属酸化物、又は金属ハロゲン化物 ェニルは好ましいアリル部分を 成する。 [0047] 好ましい実施例ではホール移動層は芳香版 第三アミンである。 芳香 飲第三アミンの好ましいサブク ラスは以下の式を有するテトラアリルジアミンを含む: င္က

[0048]

d) 化合物を含む。金属オキシノイド化合物の好ましい ここでAroはアリレン群であり、nは1から4の監数 であり、Ar、R7、R8、R9 はそれぞれ遊択された アリル群である。好ましい実権倒ではかふネセンス、亀 子住入及び移動帯は金属オキシノイド(oxinoi \$

例は以下の一般的な式を有する: [0049]

**改されえ、腸極及び、ホール往入層と電子注入及び移動** 

ここで $R_2$   $-R_7$  は置き換え可能性を数す。他の好まし い実施例では金属オキシノイド化合物は以下の式を有す

[0000]

ここで $R_2$   $-R_7$  は上記で定義されたものであり、 $L_1$ それぞれ別々に1から12の炭漿原子の水漿又は炭水化 物群を投し、L1、L2は共に、又はL2、L3は共に 通合されたペンン環を形成しつる。他の好ましい安祐例 - L 5 は集中的に 1 2又はより少ない段報原子を含み、 では金属オキシノイド化合物は以下の式である。 [0051]

(3/6)

ものである。上記例からわかるように有機EL材料は有 す。上記例は単にエレクトロルミネセンス層内で用いる れるある好ましい有機材料を数すのみである。それらは これは一般に有機エレクトロルミネセンス層を指示する 本発明の視野を制限することを意図するものではなく、 ここでR2 -R6 は水類又は他の置き換え可能性を数 機リガンドを有する配位化合物を含む。

【0052】本発明の発光漿子で用いるセグメント電極 403としては、アルミニウム、倒、亜鉛、金、クロム などの反射性金属を用いることが出来、また対向電極4 0.2としては、インジウム・ティン・オキサイズ、酸化 島などの強明導電膜を用いることが出来る。

シリコンなどの無機絶縁物質やエボキシなどの有機絶縁 シなどの有機絶縁樹脂によって封止される。また、本発 明で用いる保護層404としては、酸化シリコン、鑑化 樹脂による被膜材料を用いることが出来る。 2

または、アモルファス・シリコン(a – S i) 戯光体物 Side) 戯光符参紅、アホルファス・シリコン・カー ポン合金(a − SiC) 軽光体勉質などの無観光導電物 1 b、1 c 及び1 dの感光層として、ペンン・オキサン トリフェニルアミン米級光体物質などの有機光導電物質 質、アモルファス・シリコン・ゲルマニウム合金(a – 【0054】本発明の画像形成装置では、軽光体1a、 **一ヶ妹彪光存勢質、ペンン・サアンーヶ米彪光存勢質** 質を用いることが出来る。

コンをスパッタ法にて150nm成隊して、封止のため 保護層を形成した。なお、有機層成膜から保護層形成ま 【0055】このようにして作成した業子上に強化シリ では、同一真空系内での成膜を行なった。

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【0056】有機L E D の陽極材料としては仕事関数が 大きなものが望ましく、本実施例で用いたITOのほか にたとえば酸化錫、金、白金、パラジウム、セレン、イ リジウム、ヨウ化館などを用いることができる。

【0057】一方、路極材料としては仕事関数が小さな に、たとえばMg、A1、Li、Inあるいはこれらの ものが留ましく、本英簡例で用いたMg/Agのほか 合金等を用いることができる。 දූ

【0058】正孔輸送層に関しては、TPDのほかに下 **数に扱されるホール輸送性化合物を用いることができ**  [0059]また、有機材料だけではなく、無機材料を 用いてもよい。用いられる無磁材料としては、a-S 、a-SiCなどがあげられる。 [0060] **虹子輸送層としては、A**193のほかに下 パント色葉を電子輸送層、あるいは正孔輸送層にドーピ 【0061】また、下投10に示されているようなドー 我に我される電子輸送性化合物を用いることができる。

[0062] 有機LEDの材料は、使用する感光ドラム と略度のあったスペクトル発光をするものを選択するこ ングすることもできる。

とが窒ましい。 [0063] [4/6]

> [0053] 本発明で用いる封止材405としては、酸 化シリコン、低化シリコンなどの無機絶縁を知やエポキ

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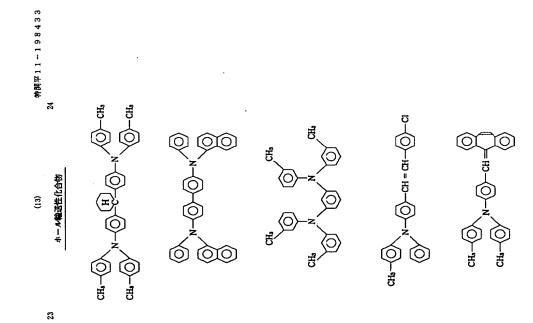
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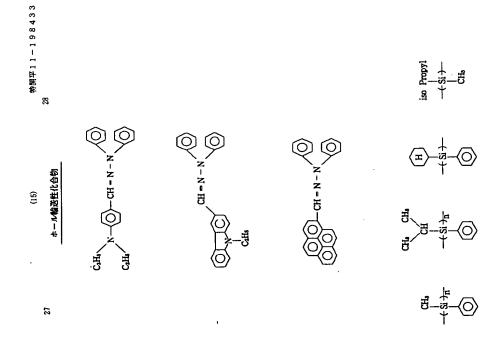
ホール輸送性化合物

ホール動形体

[74]

[0064]





3

M: Al, Ga

M : Zn, Mg, Be





M:Zn, Mg, Be

M: Zn, Mg, Be

[412]

[0070] [413]

和子编送性化合物

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[0071] [#14]

으

(C) - CH = CH - (C) - CH = CH - (C)

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[0072] [915]

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H1と同様のものが散けられ、上方の基板901(ガラ [0073] 図9は、本発明の別の好ましい酸様の発光 葉子である。下方の基板801の上には、図8で用いた ス等の絶縁性基板)の上に1ピットの発光部を形成する ための一対の電極816、815b及び鞍一対の電極関 に設けた発光層817が配置されている。これら一対の 基板801、901は、内側に向けて対向配置し、基板 スイッケング数子的SW1とサンプルホールド回路部S 801上の電極815aと基板901上の電極815b とが導電性接着剤(接着性電気接続体)902によって

や銅粒子の様な導電性粒子が分散含有された導電性接着 50 は、ハンダなどが挙げられる。 はフェノール系熱硬化接着剤中にカーボン粒子、銀粒子 [0074] 接着性電気接続体902は、エポキシ系又

電気的に接続されている。

剤を用い、これをスクリーン印刷法、オフセット印刷法 901または下基板801、あるいはその両方の所定位 又はディスペンサー資布符などの採用によって、上基板

ルトリメトキシンランなどのシランカップリング剤を含 [0075] 上述の導電性接着剤中には、界面接着力を ピルメチルジエトキンシラン、3ーグリンドキンプロピ エチル) ー3ーアミノプロピルトリメトキシシラン、3 **ーアミノプロピルトリメトキシシラン、3ーアミノプロ 右割するために、N-(2-アミノエチル)-3-アミ** ノブロピルメチルジメトキシシラン、N- (2-ブミノ 40 個に資布し、乾燥させることによって得られる。

【0076】接着性偏気接続体902の他の例として 有させることができる。

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け、この絶録接着剤を設けていない方の基板に対して導 **乾燥させることによって得られる。この繋、絶縁接 碧剤及び導気性接着剤の塗布に当って、上基板901ま** [0018]また、本発明では、上述の複塑性電気絶縁 体903に代えて、投着力を持っていない絶縁体、例え ば有機溶媒、特に高糖点有機溶媒やネマチック液晶、コ レステリック液晶、スメクチック液晶の様な液晶などの [0077] 上述の複塑性電気接続体902の外周部に 投名性電気絶縁体903が散けられる。接着性電気 絶縁体903は、エポキン私又はフェノール米絶縁被増 剤を上基板901または下基板801、あるいはその両 方の所定位置に、オフセット印刷法、スクリーン印刷法 電性接着剤を設ける製造方法を用いるのが好適である。 又はアノスペンヤー資本的などの方符によって、資本 たは基板801の一方の基板に対して絶録接着剤を散 液体絶談体を用いることもできる。

[0019] また、上述の接着性電気絶験体903また は非被為性気気絶縁体には、選光硬化を併せ持つ様に、 着色質的や強制などの着色体を含有させることもでき

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【0080】図10は、本発明の別の好ましい具体例で ある。図10に図示する発光装置は、感光ドラムなどの **欧光体の移動方向に対して、先頭ライン100Aと後穂** ライン100Bとに位置する平行なワンチップ発光粜子 アフィを設けた 平行 2ライン・ワンチップ 結光 群子 アフ 站光珠子アフィ1000包作によった、 ーラインの勧ぎ イ100を悩えている。 いの甲行2ライン・ワンチップ 込みを実行するようにするのがよい。

【0081】図11は、図10に図示する平行2ライン 先頭ライン100Aと後続ライン100Bのワンチップ 発光栞子アレイは、それぞれ上記図3に図示する栞子と ・ワンチップ独光雄子アレイ100の毎街回路ためる。 同様の等価回路のものを用いることができる。

に、それぞれ複数配置され、アクティブマトリクス回路 1、SW13、・・・SW1 (2N-1)の各ゲート組 13、0EL14・・・及び後穂ライン100Bの発光 ・・・は、電子写真複写機に搭載された時、感光ドラム ・・OEL1 (2N-1) として区分された発光報子群 子にゲート様G (100A) 1 を通して共通に接続され、偶数 【0082】先頭ライン100Aと後続ライン100B のワンチップ発光珠子アレイに儲えられている先頭ライ ン100Aの基光琳子OEL11、OEL12、OEL 第子OEL21、OEL22、OEL23、OEL24 に接続される。このアクティブマトリクス回路では、ス 4・・・として、苺馍トランジスタを用いるのが適して イッケング粧子SW11、SW12、SW13、SW1 の移動回転方向に対する土地荘方向に沿って、2 平行 (第1の群) は、奇数番目のスイッチング菓子SW1 おり、奇数番目の発光辮子OEL11、OEL13、

毎目の発光琳子OEL12、OEL14、・・・OEL

スイッチング琳子SW11-SW12、SW13-SW 14、・・・SW1 (2N-1) - SW1 (2N) 毎の ・・のアノードまたはカソードとすることができる。さ [100A] 2を通して共通に接続される。そして、このアク ティブマトリクス回路において、隣り合う発光辮子OE OEL1 (2N-1) -OEL1 (2N) 毎を降り合う 1、OEL12、OEL13、OEL14・・・の対極 70EL11, 0EL12, 0EL13, 0EL14. ソース塩子に、各ソース模 I (100A) 1、 I (100A) 2・・ は、コモン様Coに共通に接続され、それぞれの発光琛 L11-0EL12, OEL13-0EL14, ·· は、庭数毎目のスイッチング磔子SW12、SW14、 ・を通して共通に接続する。また、発光索子OEL1 ちに、スイッチング辮子SW11、SW12、SW1 1 (2N) として区分された発光菓子群 (第2の群) ・・・SW1 (2N) の各ゲート結子にゲート様G

 OEL13、OEL14・・・との間に、図3の業 プルホールド回路は、それぞれ電荷蓄積用キャパシタを を共通の接続線S (100A) 1に接続し、偶数列の電荷蓄積 用キャパシタは、ゲートを共通の接続機 S (100A) 2 に接 続され、感光ドラムの回転移動に同期させて、所定の閩 子と回棋のサンプルホールド回路を接続する。 このサン **隔時間でサンプルホールド用スイッチング寮子のゲート** 【0083】先頭ライン100Aと平行配置の後続ライ 備えており、奇数列の電荷蓄積用キャパシタは、ゲート 3、SW14···· と発光操子OEL11、OEL1 がオンまたはオフする様に設定される。

**楾G(100B) 2を通して共通に接続される。そした、この** ン100Bの発光菓子OEL21、OEL22、OEL 23、0EL24・・・に接続するアクティブマトリク ス回路でも同様に、奇数番目の発光架子OEL21、O EL23、・・・OEL2 (2N-1) として区分され た発光辮子群 (第1の群) は、奇教番目のスイッチング 独→SW21、SW23、・・・SW2 (2N-1)の 各ゲート端子にゲート練G (100B) 1 を通して共通に接続 ・・OEL2(2N)として区分された殆光辮子群(第 アクティブマトリクス回路において、隣り合う発光栞子 · • OEL 2 (2N-1) - OEL 2 (2N) #を購り 合ラスイッチング菓子 SW2 1 — SW2 2、SW2 3 — **毎のソース端子に、各ソース様Ⅰ(100B)1、Ⅰ(100B)2** ・・・を通して共通に接続する。また、発光繋子OEL 21、OEL22、OEL23、OEL24・・・の対 **第子OEL21、OEL22、OEL23、OEL24** SW24, · · · · SW2 (2N-1) - SW2 (2N) 阪は、コモン線 C<sub>0</sub>に共通に接続され、それぞれの発光 ・・・のアノードまたはカソードとすることができる。 W24、・・・SW2 (2N)の各ゲート結子にゲー OEL21-OEL22, OEL23-OEL24, され、偶数番目の発光繋子0EL22、0EL24、 2の群) は、偶数番目のスイッチング寮子SW22、 ය

プルホールド回路をが接続され、それぞれ電荷蓄積用キ ャパシタを備えており、奇数列の電荷蓄積用キャパシタ し、偶数列の電荷蓄積用キャパシタは、それぞれゲート OEL 22, OEL 23, OEL 24 · · · (CR, #) 2、SW2 3、SW2 4・・・と発光辯子OEL 2 1、 は、それぞれゲートを共通の接続換S (1008) 1に接続 さらに、同様に、スイッチング琳子SW21、SW2 を共通の接続幕 S (100B) 2 に接続される。

Aに配置した発光漿子と後続ライン100Bに配置した [0084] 上記する発光装置では、先頭ライン100 解接発光器子とは、感光体の移動方向に対して平行、す なわち感光ドラムの副走査方向に対して平行に配置する のが好ましい。

基準にして、逆極性とし、特に、亀圧平均値がゼロにな の酵気物作における原物シーケンス図かめる。図12に 図示する駆動シーケンスにおいて、先頭ライン100A の発光報子アレイの駆動中は、路接発光報子の関係にな [0085] 図12は、図10及び11に図示する囃子 るソース袋 [ (1004) 1、2、・・・とソース袋 [ (100B) 1、2、 $\cdots$ ・に印加する印加配圧は、互いに、 $C_0$ を るように散定するのが良い。

一基板から取られたものであるため、各単一チップ発光 間での粋性補償を省略することが出来たので、この分に ペき瞑題」を解消したこと、具体的には、従来の繋ぎ型 光体毎に配置した4本の単一チップ発光繋子アレイが単 黙子アフィの魁光節柱がほぼ路しいのか、合数子アフィ [発明の効果] 本発明によれば、前節の「発明の解決す LEDに変えて本発明による新規なワンチップ発光架子 アレイを用いたことによって、画像形成装置の発光禁子 アレイ部におけるコストを低減させ、主走査方向におけ るカラ一再現性を向上させることが出来、さらに、各略 おけるコストを大幅に低減させた。

[0087] さらに、本発明によれば、発光辮子の発光 **輝度を大幅に増強させ、これによって、電子写真複写機** のプロセススピードを大幅に向上させ、同時に、プリン タヘッド内のドライパー1 C数及び配線数を大幅に低減 でき、これによって、低コストのカラー電子写真複写機 を実現できた。

|図面の簡単な説明|

[図2] 本発明の画像形成装置で用いた露光部のプロッ 【図1】本発明の画像形成装置の断面図である。

[図4] 図3で用いた発光琳子アレイの毎毎回路図かめ **チアレイの斜視図である。** 

【図3】本発明で用いた単一甚板上のワンチップ発光操

7図である。

[図5] 図4で用いた発光繋子アレイの駆動シーケンス

ß [図6] 本発明の別の発光サイアノイのプロック図であ

(22)

[図1] 図6に図示する発光掛子アンイの慰憶シーケン 特別平11-198433

【図9】本独明で用いた別の発光繋子部の断面図であ [図8] 本発明で用いた発光数子の節面図である。 ス図である。

【図10】本発明で用いた別のワンチップ発光盤子アレ イの斜視図である。

【図11】図10で用いた雑光辮子アンイの毎毎回路図 10 ct 20 5.

[図12] 図11で用いた発光報子アレイの慰動シーケ [符号の説明] ソス図わめる。

コロナギ和器 1a, 1b, 1c, 1d 2a, 2b, 2c, 2d

极低性问题 38, 3b, 3c, 3d 48, 4b, 4c, 4d

定着装置

7 分離除配器 カセット

ន

8a、8b、8c、8d 超光年段 Pa, Pb, Pc, Pd

[0086]

表述ペケト

原動ローア

36 独製ローア

定着ローラ

2008 イエロー用略光掛子アング 5.2 加圧ローラ

2006 マポンタ用始光珠子アンイ ຂ

200c シアン用略光盤中プレイ

200d 既色用強光辮子アン

01a~4 引き出し配袋部 :02a イエロー何号駆動部 レガンク紅中間動能 シトン哲中既動物 0 2 P 02 c

イエロー用ゲート駆動回路 マガンタ用ゲート啓彰回路 既句佰吟感勧恕 2 0 2 d 203a 203b

シアン用ゲート駆動回路 **黒色用ゲート駆動回路** イエロー信号発生回路 203c 203d 204a \$

2046 マゼンタ信号発生回路

シアン哲中独外回路 用色伯号発生回路 205 画像有一般处理数量 204c 204d

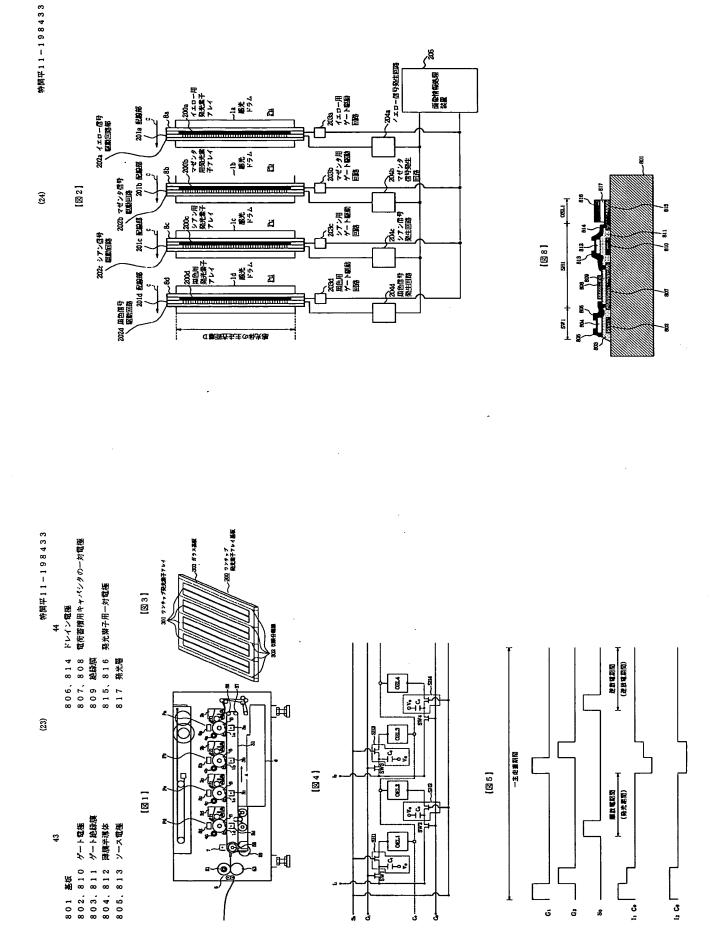
ワンチップ組光路子アフィ 払板 ワンチッと昭光路中トフィ 301 300

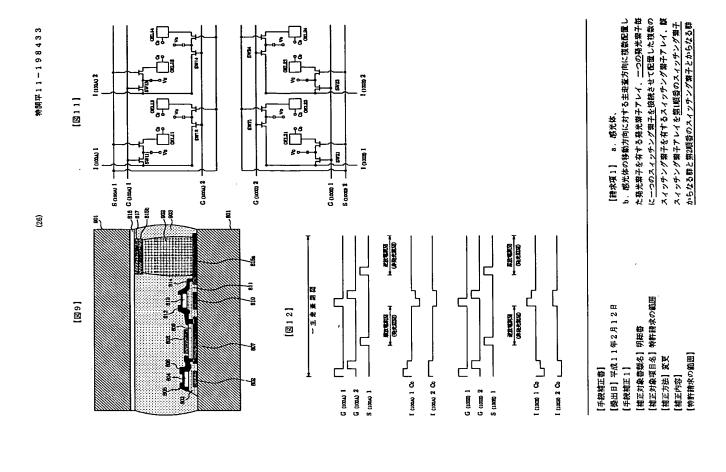
**空配分隔楼** 

302

ガラス基板

303





[图 1]

ទី ទី ទី **ន** 

5 [

100 年行3シインワンヤップ 、 現名表件アフィ

1003 後載ライン

第3型式者デアンイプロック

第3発光像子アレイプロック

第1元は子さいイブロック

最光体移動方向

CASTO T PERIND

[图10]

[9國]

**特開平11-198433** 

(22)

特別中11-198433

(28)

一ト様と第2頃番用ゲート様とからなる第1配模群、蚊 スイッチング架子アレイを互いに相違するゲート線で接 続し、且つ第1項番のスインケング繋子と第2項番のス に接続してなる複数のソース線からなる第2配線群、及 アイからの国時路光によって、世記数光体への臨光や映 **報子群内の複数のスィッチング報子のソース 婚子を共通** の電気信号を蓄積するキャパンタを有し、蚊キャパンタ **つのスイッチング架子の群毎に、蚊一つのスイッチング** を一斉に放伍させ、これによって、前配発光楽子アレイ を同時に発光させる同時発光回路を有し、餃発光栞子ア に、蚊一つのスイッチング班子群内の複数のスイッチン イッチング第子とからなる群に区分し、蚊区分されたー び前記スインチング架子を介して、前記第2配模群から に区分し、 飯区分された一つのスイッチング第子群年 行させる解光手段、並びに

れたゲート格上のスイッテング架子のゲート端子がオン 状態となり、かかるオン状態の期間中に、第2配線群か に充電させ、しかる後に、蚊キャパシタを一斉に放電さ せるように前配同時発光回路を動作させ、続いて、前記 第1配線群に第2回目の走査伯号を頃次印加し、これに 、かかるオン状態の期間中に、第2配線群から、他方 **原キャパンタを一斉に放電させるように前配同時発光回** 、画像情報に応じた一方極性の電圧信号をキャパンタ これによって、蚊類1の配線毎の走査信号が印加さ よって、駿第1の配格毎の走査信号が印加されたゲート 極性の電圧信号をキャパシタに充電させ、しかる後に、 c. 前記第1配線群に第1回目の走査信号を<u>順次</u>印加 換上のスイッチング菓子のゲート端子がオン状態とな 路を動作させる駆動手段 نـ

【請求項2】 前記発光報子は、有機発光報子を有する 【請求項3】 前配数光体は、電子写真感光体である譜 **発子である請求項1に記載の画像形成装置。** を有する画像形成装置。

[請求項4] 前記包子写其感光体は、有機包子写其感 **秋瓜1に配戦の画像形成装置。** 

[請求項5] 前記電子写其感光体は、無機電子写其感 光体である諸水田3に記載の画像形成桜間。

[請求項6] 前配無機電子写真感光体は、アモルファ スシリコン電子写其感光体である請求項5に配載の画像 光体でもも誰水斑3に記載の画像形成装置。

【語水瓜9】 前記国邸発光回路は、サンプルボールド 【請求項7】 前記スインチング衆子は、研模トランジ [請求項8] | 前記スインチング菓子アレイは、ワンチ ップ成形されている請求項1記載の画像形成装置。 スタでもる諸女母11記載の画像形成装置。

【詩水項10】 前記第1の頃番及び第2の頃番は、そ

回路を有している回路である請求項1記載の画像形成装

**ルぞれ奇数番及び偶数番である請求項 1 記載の画像形成** 

を接続させて配置した複数のスイッチング第子を有する **接続してなる第1頃番用ゲート線と第2頃番用ゲート線** チング禁子と第2順番のスィッチング禁子とからなる群 に区分し、蚊区分された一つのスイッチング繋子の群毎 **<b><b>ゆからなる第2配**線群、及び前配スイッチング案子を介 って、前記発光菜子アレイを同時に発光させる同時発光 ロック内の一つの発光菓子毎に一つのスィッチング菓子 スイッチング琳子アレイ、駿スイッチング辮子アレイを 第1 順番のスイッチング架子からなる群と第2 順番のス イッチング寮子からなる群とに区分し、数区分された一 子群内の複数のスイッチング栞子のゲート端子を共通に いに相違するゲート様で接続し、且つ第1順番のスイン に、骸一つのスイッチング架子群内の複数のスイッチン **グ架子のソース端子を共通に接続してなる複数のソース** シタを有し、蚊キャパシタを一斉に放電させ、これによ **つのスィッチング葉子群毎に、蚊一つのスィッチング架** とからなる第1配線群、餃スイッチング繋子アレイを互 b. 陽光体の移動方向に対する主走査方向に複数配置し た発光架子を有し<u>、核技教配置した発光架子を複数のフ</u> ロック毎に区分し、該区分された複数の発光報子アレイ プロックからなる発光報子アレイ、各発光探子アレイブ して、前記第2配線群からの電気信号を蓄積するキャパ 回路を有し、鮫発光漿子アレイからの同時発光によっ て、前記啓光体への露光を実行させる露光手段、

ッチング架子とからなる群に区分し、蚊区分された一つ

且つ第1 頃番のスィッチング菓子と第2 頃番のスィ

のスイッチング架子の群毎に、餃一つのスイッチング架 子群内の複数のスイッチング衆子のソース増子を共通に

毎のスィッチング索子を互いに相違するゲート線で接続

接続してなる複数のソース線からなる第2配線群、及び

前記スイッチング葉子を介して、前記第2配線群からの

前配各発光業子アレイプロックを順次動作させる第

d. 前配第1配線群に第1回目の走査信号を<u>順次</u>印加 1原動手段、並びに

がオン状態となり、かかるオン状態の期間中に、第2配

パシタに充電させ、しかる後に、眩キャパシター斉に放

電させるように前記同時発光回路を動作させ、続いて

前記第1配線群に第2回目の走査信号を順次印加し

線群から、画像情報に応じた一方極性の電圧信号をキャ

印加されたゲート線上のスイッチング衆子のゲート端子

次印加し、これによって、故第1の配券毎の走査信号が

させる露光手段、並びに

状態となり、かかるオン状態の期間中に、第2配線群か ち、画像情報に応じた一方極性の電圧信号をキャパシタ に充電させ、しかる後に、餃キャパシタを一斉に放電さ せるように前配同時発光回路を動作させ、続いて、前記 第1配線群に第2回目の走査信号を順次印加し、これに り、かかるオン状菌の期間中に、第2配線群から、他方 **ダキャパンタを一斉に放電させるように前配同時発光回** 極性の電圧信号をキャパシタに充電させ、しかる後に、 れたゲート繰上のスィッチング架子のゲート端子がオン よって、眩第1の配券毎の走査信号が印加されたゲート これによって、眩第1の配線毎の走査個号が印加さ **貸上のスイッチング架子のゲート端子がオン状態とな** 路を動作させる第2の駆動手段 نہ

「酵水項12】 前記同時発光回路は、サンプルホール (回路を有している回路である静水項11記載の画像形 を有する画像形成装置。 成装置。

【請求項13】 前記第1の頃番び第2の頃番は、それ **ぞれ奇数番及び偶数番である請求項11記載の画像形成** 

せ、これによって、前配発光菓子アレイを同時に発光さ とからなる群に区分し、版区分された一つのスイッチン 関するキャパンタを有し、蚊キャパンタを一斉に放電さ せる同時発光回路を有し、蚊発光架子アレイからの同時 区分された一つのスイッチング第子群毎に、数一つのス ィッチング珠子群内の複数のスィッチング珠子のゲート **増子を共通に接続してなる第1頃番用ゲート級と鮮2頃 番用ゲート終とからなる第1配格群、<u>飲みイッチング</u>署 アアレイを互いに相違するゲート袋で接続し、且つ第1** 頃番のスィッチング類子と第2頃番のスィッチング類子 が昇子の群毎に、餃一つのスィッチンが第子群内の複数 **カスィッチング架子のソース端子を共通に接続し<u>てなる</u>** <u>攻数のソース様からなる</u>第2配模群、及び<u>前配スインチ</u> 約2頃番のスイッチング類子とからなる群に区分し、00 ング栞子を介して、前配第2配線群からの電気信号を置 角光を実行させる発光手段、並びに

**嫁キャパンタを一斉に放電させるように前配同時発光回** 状態となり、かかるオン状態の期間中に、第2配線時か に充電させ、しかる後に、眩キャパシタを一斉に放電さ せるように前記同時発光回路を動作させ、続いて、前記 第1配線群に第2回目の走査信号を順次印加し、これに かかるオン状態の期間中に、第2配線群から、他方 **れたゲート様上のスイッチング栞子のゲート端子がオン** ち、画像情報に応じた一方極性の電圧信号をキャパシタ よって、眩算1の配袋毎の走査信号が印加されたゲート **亜性の電圧作号をキャパンタに充電させ、しかる後に、** これによって、放射1の配梯毎の走査信号が印加さ 換上のスィッチング寮子のゲート端子がオン状態とな

> 同時に発光させる同時発光回路を有し、数発光報子アレ イからの同時発光によって、前記数光体への騒光を実行 c. 各行毎の前配第1配線群に第1回目の走査信号を順

一斉に放唱させ、これによった、自配路光珠子アング

電気信号を蓄積するキャパンタを有し、 餃キャパンタを

**れぞれ奇数番及び個数番である請求項17記載の発光数** [請求項18] 前記第1の順番及び第2の順番は、

【請求項<u>19</u>】 前配発光報子は、有機発光報子を有す る珠子である請求項17に配載の発光装置。

チップ成形されている請求項<u>17</u>配載の発光装置。 の発光装置。

ド回路を有している回路である請求項14記載の画像形

|諸水項15| 前記同時発光回路は、サンプルホール

に、餃キャパンタを一斉に放電させるように前配同時発

光回路を動作させる駆動手段を有する画像形成装置。

方極性の電圧信号をキャパシタに充電させ、しかる後 なり、かかるオン状態の期間中に、第2配検群から、

一ト線上のスイッチング寮子のゲート端子がオン状態と

れによって、陜第1の配納毎の走査信号が印加されたゲ

れぞれ奇数番及び偶数番である請求項14配載の画像形

|請求項16| 前記第1の順番及び第2の順番は、そ

a. 一方向に複数配置した発光菓子を

|酵水項17|

ッチング衆子を接続させて配置した複数のスイッチング 榤子を有するスイッチング囃子アレイ、 酸スイッチング

**幕子アレイを第1順番のスィッチング菓子からなる鞋と** 

**育する発光繋子アノ、<u>一つの</u>発光繋子毎に<u>一つのス</u>** 

分し、蚊区分された複数の発光菓子アレイブロックから 有し、核複数配置した発光架子を複数のプロック毎に区 なる発光架子アレイ、各発光器子アレイプロック内の一 [請求項23] a. 一方向に複数配置した発光報子を

**る第1配線群、骸スイッチング粟子アレイのうち、各行** <u>子からなるスィッチング菓子</u>アレイ、<u>酸スイッチング菜</u> 子アレイのうち、各行毎のスィッチング菓子を<u>第1原管</u> ッチング索子群毎に、数一つのスイッチング架子群内の り、成光体に対して複数列及び複数行に配置した発光操 子を有する発光栞子アレイ、一つの発光栞子毎に一つの スイッチング菓子を接続させて配置し、これによって配 のスイッチング衆子からなる群と第2頃番のスイッチン **複数のスイッチング架子のゲート端子を共通に接続して** なる第1 順番用ゲート線と第2 順番用ゲート線とからな **買された複数の列及び複数行上の複数のスイッチング**類 グ塀子とからなる群に区分し、蚊区分された一つのスイ

b. 前配第1配線群に第1回目の走査伯号を<u>個表</u>印加

路を動作させる駆動手段を有する発光装置。

**[酵水項<u>20]</u> 前記スイッチング報子は、海膜トラン** ジスタであり、前配第1端子は、ゲート端子であり、そ した栏記棋2越子は、ソース絡子である韻水垣 17 記載 [請求項21] 前記スインテング琳子アレイは、ワン **[静水項 22] 前記同時発光回路は、サンプルボール** ド回路を有している回路である請求項17記載の発光数 <u>つの</u>発光第子毎に<u>一つのスィッケング第子を</u>模様させて 配置した複数のスィッチング第子を有するスィッチング

**特開平11-198433** 

- 前配各発光報子アレイプロックを吸次動作させる第 1原動手段、並びに
- 状態となり、かかるオン状態の期間中に、第2配線群か ら、画像情報に応じた一方極性の電圧伯号をキャパシタ に充電させ、しかる後に、瞭キャパンタを一斉に放電さ せるように前配回時発光回路を動作させ、続いて、前配 第1配券群に第2回目の走査信号を収次印加し、これに かかるオン状態の期間中に、第2配線群から、他方 嬢キャパンタを一斉に放電させるように前記同時発光回 [静水項24] 前記国時発光回路は、サンプルホール れたゲート枠上のスイッチング架子のゲート端子がオン 杨性の聞圧信号をキャパシタに充唱させ、しかる後に、 これによって、緊第1の配換毎の走査信号が印加さ よって、放射1の配換毎の走査信号が印加されたゲート c. 前記第1配線群に第1回目の走査信号を順次印加 袋上のスイッチング穿子のゲート端子がオン状態とな 省を動作させる第2の駆動手段を有する発光装置。

を有する発光装置

ド回路を有している回路である静水項23 記載の発光装 [請求項25] 前記第1の順番及び第2の順番は、そ

**れぞれ奇数番及び偶数番である請求項23配載の発光装** 

[請求項26] B. 複数列及び複数行に配置した発光 寮子を有する発光寮子アレイ、一つの発光繋子毎に一つ のスイッチング第子を接続させて配置し、これによって **毎のスイッチング報子からなる群と類2頃番のスイッチ** ング寮子とからなる群に区分し、数区分された一つのス イッチング架子群毎に、眩一つのスイッチング衆子群内 の複数のスイッチング第子のゲート端子を共通に接続し **第子からなるスィッチング第子アレイ、蚊スィッチング** 配置された複数の列及び複数行上の複数のスイッチン

なる第1配線群、酸スイッチング囃子アレイのうち、各 行毎のスイッチング架子を互いに相違するゲート線で接 珠子群内の複数のスィッチング珠子のソース 結子を共通 に接続してなる複数のソース線からなる第2配線群、及 てなる第1順番用ゲート線と第2順番用ゲート線とから 院し、且つ第1 頃番のスイッチング紫子と第2 顧番のス イッチング菓子とからなる群に区分し、蚊区分された一 <u>を一斉に放電させ、これによって、</u>前配発光葉子アレイ を同時に発光させる同時発光回路を有し、軽発光葉子ア つのスイッサング菓子の群毎に、蚊一つのスイッチング の電気信号を蓄積するキャパシタを有し、鮫キャパシタ び前記スイッチング葉子を介して、前記第2配線群から レイからの同時発光を実行させる魔光手段、並びに

眸、及び前記スインチング禁子を介して、前記第2配線

1の配線毎の走査信号が印加されたゲート線上のスイン

b. <u>各行毎の</u>前記第1配線群に第1回目の走査倡号を<u>順</u> 印加されたゲート線上のスィッチング葉子のゲート端子 がオン状態となり、かかるオン状態の期間中に、第2配 **検辞から、画像情報に応じた一方極性の電圧信号をキャ** パシタに充電させ、しかる後に、豚キャパシタを一斉に 状態となり、かかるオン状態の期間中に、第2配線群か ち、他方極性の電圧信号をキャパシタに充電させ、しか る後に、蚊キャパンタを一斉に放電させるように前配同 れたゲート梯上のスイッチング葉子のゲート端子がオン 太印加し、これによって、該第1の配券毎の走査信号が し、これによって、故第1の配線毎の走査信号が印加さ 放電させるように前記同時発光回路を動作させ、続い て、前配第1配線群に第2回目の走査信号を順次印加 時発光回路を動作させる駆動手段

の走査信号を頃次印加し、これによって、散第1の配券

方極性の電圧信号をキャパシタに充電させ、しかる後

を有する画像形成装置に、第1の特徴を有し、第2に、

【請求項27】 前記同時発光回路は、サンプルホール ド回路を有している回路である請求項26記載の発光装

**れぞれ奇数番及び偶数番である請求項26記載の発光装** 【酵水項28】 前記第1の順番及び第2の順番は、

[補正対象書類名] 明紺書

補正対象項目名】0009

植正方法】変更

ィッチング菓子群内の複数のスィッチング菓子のゲー

相正内容

0000

数配置した発光群子を有する発光群子アレイ、一つの発 光粟子毎に一つのスイッチング繋子を接続させて配置し た複数のスィッチング栞子を有するスィッチング栞子ア らなる群に区分し、数区分された一つのスイッチング業 子群毎に、蚊一つのスイッチング舞子群内の複数のスイ ッチング繋子のゲート端子を共通に接続してなる第1項 ング栞子からなる群と第2頃番のスイッチング菜子とか レイ、餃スィッチング栞子アレイを<u>類1頃街のスィッチ</u> **課題を解決するための手段】本発明は、第1に、a.** 

時発光回路を動作させ、続いて、前配第1配模群に第2 記録毎の走査佰号が印加されたゲート線上のスイッチン

**回目の走査信号を順次印加し、これによって、歓祭1の** 

これによって、前配発光菓子アレイを同時に発光さ

憤するキャパシタを有し、眩キャパシタを一斉に放唱さ

**ける同時発光回路を有し、蚊狢光漿子アレイからの回時** 

アレイを同時に発光させる同時発光回路を有し、蚊発光 子のゲート増子がオン状態となり、かかるオン状態の期 間中に、第2配検群から、画像情報に応じた一方極性の 作させ、続いて、前配第1配線群に第2回目の走査信号 **た箱光繋子を有する箱光繋子アレイ、一つの鴉光辮子毎** よって配置された複数の列及び複数行上の複数のスイン ケング架子アレイのうち、各行毎のスイッチング辮子を れた一つのスイッチング菜子の群毎に、菓一つのスイッ を共通に接続してなる複数のソース様からなる 第2配線 パンタを一斉に放配させ、これによって、 哲配発光路子 記線群に第1回目の走査信号を頃次印加し、これによっ 発光によって、前記数光体への観光を実行させる配光年 段、 c. 前配各強光報子アレイプロックを頃次動作させ ペンタを一斉に放電させるように前配同時発光回路を動 **端子がオン状態となり、かかるオン状態の期間中に、第** 2配模群から、他方板性の電圧信号をキャパンタに充電 させ、しかる後に、蚊キャパンタを一斉に放電させるよ 筑1 頂番のスイッチング類子からなる群と第2 順番のス イッチング第子とからなる時に区分し、数区分された一 つのスイッチング独子群毎に、数一つのスイッチング報 **嵌続してなる第1頃番用ゲート線と第2頃番用ゲート線 除で接続し、且つ第1頃番のスイッチング報子と第2頃 番のスイッチング楽子とからなる群に区分し、蚊区分さ** ケング架子群内の複数のスイッケング架子のソース蝸子 **詳からの電気信号を書積するキャパンタを有し、蚊キャ サナアフイからの回時発光によった、 世記数光体への**算 光を実行させる解光手段、並びに c. <u>各行毎の</u>前配第1 のスィッチング栞子のゲート端子がオン状態となり、か かるオン状態の期間中に、第2配袋群から、画像情報に かる後に、眩キャパシター斉に放配させるように前配同 る第1駆動手段、並びに4.前配第1配模群に第1回目 毎の走査個身が印加されたゲート袋上のスインチング類 **配圧信号をキャパンタに充電させ、しかる後に、膝キャ** に一つのスイッチング菓子を接続させて配置し、これに チングサ子からなるスイッチング囃子アレイ、蚊スイッ 子群内の複数のスイッチング衆子のゲート蝸子を共通に とからなる第1配検群、眩スイッチング発子アレイのう **洋、及び前記スイッチング第子を介して、前配第2配機** の走査信号を順次印加し、これによって、収算1の配線 らに前記同時発光回路を動作させる第2の駆動年段を有 啓光体、 b. 啓光体に対して複数列及び複数行に配置し ち、各行毎のスイッチング辯子を互いに相違するゲー! て、眩第1の配線毎の走査個号が印加されたゲート線上 を頃次印加し、これによって、瞭第1の配券毎の走五佰 する画像形成装置に、第2の特徴を有し、第3に、a. **身が印加されたゲート株上のスイッチング報子のゲー むじた一方極性の電圧信号をキャパシタに充電させ、** 光栞子アレイブロックからなる発光栞子アレイ、各発光 に複数配置した発光架子を有し<u>、核複数配置した発光架</u> チング栞子群内の複数のスイッチング栞子のソース端子 **栞子アレイからの同時発光によって、前記悠光体への**望 光回路を動作させ、続いて、前記第1配線群に第2回目 **閏中に、第2配線群から、他方極性の電圧信号をキャパ** ノタに充電させ、しかる後に、眩キャパシタを一斉に放 電させるように前配同時発光回路を動作させる駆動手段 **子を複数のプロック毎に区分し、酸区分された複数の発 索子アレイを 第1 順番のスイッチング衆子からなる群と** 第2順番のスイッチング類子からなる群とに区分し、眩 ゲ架子の群毎に、餃一つのスイッチング菜子群内の複数 **各用ゲート線と第2順番用ゲート線とからなる第1配線** 壊で接続し、且の第1 順番のスイッチング 琳子と 第2 順 を共通に接続してなる複数のソース線からなる第2配線 パンタを一斉に放電させ、これによって、前記発光群子 アレイを同時に発光させる同時発光回路を有し、歓発光 光を実行させる**露光手段、並びにc. 前配第1配線群に** 第1回目の走査信号を順次印加し、これによって、飲料 状態の期間中に、第2配線群から、画像情報に応じた一 に、餃キャパシタを一斉に放電させるように前配同時発 毎の走査信号が印加されたゲート線上のスイッチング策 子のゲート端子がオン状態となり、かかるオン状態の期 a. 殷光体、b. 殷光体の移動方向に対する主走査方向 架子アレイプロック内の一つの発光架子毎に一つのスイ ッチング栞子を接続させて配置した複数のスィッチング **栞子を有するスィッチング栞子アレイ、餃スィッチング** 区分された一つのスイッチング架子群毎に、鞍一つのス 端子を共通に接続してなる第1 順番用ゲート線と第2順 **番用ゲート繰とからなる第1配線群、眩ス<u>イッチング</u>棄 チアレイを互いに相違するゲート様で接続し、且つ第1** 頃番のスィッチング葉子と第 2 順番のスィッチング葉子 とからなる群に区分し、歓区分された一つのスイッチン のスィッチング策子のソース端子を共通に接続してなる 複数のソース様からなる第2配線群、及び前配スイッチ **時、蚊スイッチング架子アレイを互いに相迎するゲート** 香のスイッチング菓子とからなる群に区分し、鮫区分さ れた一つのスイッチング架子の群毎に、隊一つのスイン **详からの電気信号を蓄積するキャパンタを有し、蚊キャ** チング塀子のゲート端子がオン状態となり、かかるオン ノグ菜子を介して、前記第2配線群からの電気信号を置

置した発光報子を有し<u>、解複数配價した発光報子を複数</u> のスイッチング第子とからなる群に区分し、敵区分され グ寮子群内の技数のスイッチング寮子のゲート端子を共 ゲ寮子のゲート端子がオン状態となり、かかるオン状態 に放気させるように前配同時発光回路を動作させる駆動 **手段を有する画像形成装置に、第3の特徴を有し、第4** に、8. 一方向に複数配置した発光報子を有する発光報 **チアレイ、一つの箱光琳子毎に一つのスイッチング辮子** を接続させて配置した複数のスイッチング菓子を有する スィッチング駐子アレイ、蚊スィッチング駐子アレイを ンチング架子とからなる群に区分し、鞍区分された一つ 群内の複数のスイッチング菓子のゲート端子を共通に接 **稅してなる第1頃番用ゲート様と第2頃番用ゲート様と** に相違するゲート級で接続し、且つ第1順番のスイッチ ング衆子と第2頃街のスインチング架子とからなる群に **グ寮子のソース増子を共通に接続してなる複数のソース** シタを有し、眩キャパシタを一斉に放電させ、これによ って、前記発光報子アレイを同時に発光させる同時発光 回路を有し、緊発光群子アレイからの回時発光を実行さ せる発光手段、並びに b. 前配第1配検群に第1回目の の走査信号が印加されたゲート株上のスイッチング菓子 のゲート増子がオン状態となり、かかるオン状態の期間 中に、第2配線群から、画像情報に応じた一方極性の電 圧信号をキャパシタに充電させ、,しかる後に、餃キャパ ンタを一斉に放電させるように前配同時発光回路を動作 させ、続いて、前記第1配線群に第2回目の走査信号を が印加されたゲート様上のスイッチング策子のゲート増 子がオン状態となり、かかるオン状態の期間中に、第2 配券群から、他方極性の電圧信号をキャパシタに充電さ に前記同時発光回路を動作させる駆動手段を有する発光 イプロック内の一つの発光珠子毎に一つのスィッチング 算子を投続させて配置した複数のスイッチング架子を有 **するスィッチング駐子アレイ、版スィッチング駐子アレ** イを第1 頃番のスイッチング葉子からなる群と第2 頃番 た一つのスイッチング寮子群毎に、 骸一つのスイッチン の期間中に、第2配袋群から、他方極性の電圧信号をキ に充電させ、しかる後に、蚊キャパンタを一斉 のスイッチング第子群毎に、豚一つのスイッチング菜子 からなる第1配検群、放スイッチング架子アレイを互い 数一つのスインチング報子群内の複数のスイッチン 袋からなる 第2配袋群、及び前配スイッチング囃子を介 せ、しかる後に、餃キャパシタを一斉に放置させるよう のプロック毎に区分し、敵区分された複数の発光塀子ア レイプロックからなる発光駐子アレイ、各発光珠子アレ 第1頃巻のスィッチング琳子からなる群と第2頃番のスィ 頃次印加し、これによって、陜第1の配券毎の走査信号 して、前記第2配袋群からの電気倍号を習得するキャパ 走査信号を頃次印加し、これによって、散第1の配線毎 装置に剪4の特徴を有し、<u>餌5に、a.</u> 一方向に複数配 区分し、蚊区分された一つのスィッチング琳子の群毎

**ャパシタを有し、数キャパシタを一斉に放電させ、これ** によって、前配発光架子アレイを同時に発光させる同時 発光回路を有し、籔発光繋子アレイからの同時発光を実 <u>ロックを</u>順次動作させる第1駆動手段、並びに c . 前記 情報に応じた一方極性の電圧信号をキャパンタに充電さ イッチング繋子のゲート端子がオン状態となり、かかる オン状態の期間中に、第2配線群から、他方極性の電圧 タを一斉に放電させるように前配同時発光回路を動作さ 有し、第6に、a. 複数列及び複数行に配置した発光報 子を有する発光繋子アレイ、一つの発光繋子毎に一つの スイッチング索子を接続させて配置し、これによって配 子からなるスイッチング架子アレイ、餃スイッチング架 <u> アアレイのうち、</u>各行毎のスイッチング類子を<u>類1順番</u> のスイッチング衆子からなる群と第2順番のスイッチン **パチング栗子群毎に、餃一つのスイッチング架子群内の** よる第1 順番用ゲート様と第2順番用ゲート様とからな 5第1配線群、胺スイッチング寮子アレイのうち、各行 **年のスイッチング架子を互いに相違するゲート線で接続 幕子群内の複数のスィッチング珠子のソース 蝸子を共通** に接続してなる複数のソース線からなる第2配線群、及 の電気信号を蓄積するキャパシタを有し、餃キャパシタ <u>を一斉に放電させ、これによって、前記第光報子アレイ</u> を同時に発光させる同時発光回路を有し、**繁発光**類子ア 1 シチング禁子と第2 順番のスイッチング禁子とからな **5群に区分し、紋区分された一つのスイッチング架子の** 第1配線群に第1回目の走査信号を順次印加し、これに り、かかるオン状態の期間中に、第2配線群から、画像 に前記同時発光回路を動作させ、続いて、前記第1配線 **目号をキャパシタに充電させ、しかる後に、蚊キャパシ** 置された複数の列及び複数行上の複数のスイッチング類 / 葉子とからなる群に区分し、蚊区分された一つのスイ **弉毎に、蚊一つのスィッチング策子群内の複数のスイン** チング琳子のソース端子を共通に接続してなる複数のソ **一ス級からなる第2配線群、及び前配スイッチング葉子** 行させる鷗光手段、並びにb.前配各発光漿子アレイブ しかる後に、蚊キャパシタを一斉に放唱させるよう せる第2の駆動手段を有する発光装置に、第5の特徴を **し、且つ第1順番のスイッチング禁子と第2順番のスイ** クスイットング出上の特色に、数一しのストックング 通に接続してなる第1順番用ゲート線と第2順番用ゲー ト線とからなる 第1配線群、酸スイッチング辮子アレイ **と互いに相違するゲート線で接続し、且つ第1順番のス** こって、数第1の配線毎の走査信号が印加されたゲート 放第1の配線毎の走査個号が印加されたゲート線上のス 複数のスイッチング報子のゲート端子を共通に接続して ッチング菓子とからなる群に区分し、骸区分さーれた-び前記スイッチング架子を介して、前配第2配線群から を介して、前記第2配線群からの電気信号を書稽するキ 群に第2回目の走査信号を順次印加し、これによって、 袋上のスイッチング寮子のゲート端子がオン状態とな

させるように前配同時発光回路を動作させ、続いて、前 各行毎の前記第1配線群に第1回目の走査伯号を<u>順次</u>印 ン状態となり、かかるオン状態の期間中に、第2配検群 から、画像情報に応じた一方極性の電圧伯号をキャパシ ト格上のスイッチング架子のゲート端子がオン状態とな タに充電させ、しかる後に、数キャパシタを一斉に放電 されたゲート袋上のスイッチング架子のゲート端子がオ 極性の間圧信号をキャパシタに充電させ、しかる後に、 加し、これによって、故第1の配線毎の走査信号が印加 ノイからの同時発光を実行させる鷗光手段、並びにも、 記算1配券群に第2回目の走査信号を傾入印加し、 によって、数第1の配券毎の走査信号が印加された

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ダキャパンクを一斉に 放電させるように前記同時発光回

かかるオン状態の期間中に、第2配線群から、他方

首を動作させる駆動手段を有する発光装置に、第6の特 [0012] 本発明の好ましい好4の超接倒では、前配 スイッチング架子は、薄膜トランジスタであり、ま [補正対象項目名] 0012 [補正対象哲類名] 明細哲 [相正方法] 変更 [手統補正3] [桶正内容] 数を有する。

フロントムージの結が

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**策スイッチング架子アレイの第1の収番及び第2の収録** は、それぞれ奇数番及び偶数番である。